return to: SAB

UNIVERSITY OF CALIFORNIA, DAVIS

BERKELEY • DAVIS • IRVINE • LOS ANGELES • RIVERSIDE • SAN DIEGO • SAN FRANCISCO

SANTA BARBARA • SANTA CRUZ

SCHOOL OF VETERINARY MEDICINE
DEPARTMENT OF MEDICINE
TELEPHONE: (916) 752-1363
FAX: (916) 752-0414

UNIVERSITY OF CALIFORNIA, DAVIS
DAVIS, CALIFORNIA 95616-8737

July 6, 1999

Shirley Birosik
RWQCB
320 West 4th Street
Suite 200
Los Angeles, CA 90013

Dear Shirley Birosik:

Enclosed please find hard copies of the data tables of the results, a disk containing electronic copies of the data tables, and laboratory bench sheets for the Calleguas Creek toxicity monitoring project. The data tables are in Excel 97 format. Each month of monitoring is contained in a single Excel workbook with each table being a worksheet within the workbook (each worksheet is represented as a tab at the bottom of the workbook). Please contact me if you have any question or comments about the data.

Sincerely,

Karen Larsen

Karen Larsen
PGR II
Enclosure (3)

3

Table X. Summary of 7-day *Ceriodaphnia* toxicity test conducted on samples collected from the Calleguas Creek watershed on 5 November 1998.[2]

Treatment	Reproduction[1] (neonates/adult)		Mortality[1] (%)	Final pH at 24 hours
	x	se		
Laboratory Control	32.5[P]	3.7	0.0[P]	8.43
Laboratory Control salted up to 2000 umhos	28.4	1.7	0	8.42
Station 3 - Arroyo Simi below HWY 118	6.2	2.5	0	8.64
Station 1 - Arroyo Simi above SVWQCP	35.2	3.2	0	8.36
Station 11 - Conejo Creek	*	*	100 (8)	8.70

P. The laboratory control met all EPA criteria for test acceptability. 90% of the daphnids had a third brood.
1. Highlighted cells indicate a significant reduction in reproduction or increase in mortality relative to the laboratory control water. The mortality endpoint was analyzed using Fisher's Exact Test.
2. This test was set up on 6 November 1998.
* Due to significant mortality observed in this sample, reproduction was not calculated.
(#) Number in parentheses represents days to 100% mortality.

Table X. Summary of 7-day *Pimephales* toxicity test conducted on samples collected from the Calleguas Creek watershed on 5 November 1998.[2]

Treatment	Growth[1] (mg/indiv)		Mortality (%)[1]		Final pH at 24 hours
	x	se	x	se	
Laboratory Control	0.404[P]	0.004	0.0[P]	0.0	8.15
Station 3 - Arroyo Simi below HWY 118	0.650	0.000	95.0	3.0	8.55
Station 1 - Arroyo Simi above SVWQCP	0.451	0.022	12.5	9.0	8.18
Station 11 - Conejo Creek	0.382	0.021	20.0	14.0	8.52

P. The laboratory control met the criteria for test acceptability.

1. Highlighted areas indicate a significant increase in mortality or decrease in growth when compared to the laboratory control. The growth and mortality endpoints were analyzed with Dunnett's Test ($p<.05$).
2. This test was set up on 6 November 1998.

Table X. Summary of 7-day *Pimephales* toxicity test conducted on samples collected from Station 3: Arroyo Simi below Hwy. 118 on 5 November 1998.[2]

Treatment	Mortality (%)[1]		Final pH at 24 hours
	x	se	
Laboratory Control	0.0	0.0	8.09
Laboratory Control at pH 7	0.0	0.0	8.03
Laboratory Control at pH 6	0.0	0.0	7.99
Laboratory Control treated with Ammonex	0.0	0.0	7.99
Arroyo Simi below HWY 118	65.0	5.0	8.49
Arroyo Simi below HWY 118 at pH 7	0.0	0.0	8.10
Arroyo Simi below HWY 118 at pH 6	10.0	10.0	7.38
Arroyo Simi below HWY 118 treated with Ammonex	55.0	12.6	8.50

P. The laboratory control met the criteria for test acceptability.

1. Highlighted areas indicate a significant increase in mortality or decrease in growth when compared to the laboratory control. The growth and mortality endpoints were analyzed with Dunnett's Test ($p<.05$).
2. This test was set up on 10 November 1998.

Table X. Summary of water chemistry measurements on samples collected from the Calleguas Creek watershed on 5 November 1998.

Treatment	Field Temp (^{O}C)	Field pH	Field EC (µmhos/cm)	Lab pH	Lab EC (µmhos/cm)	Lab DO (mg/L)	Total Hardness (mg/L as $CaCO_3$)	Alkalinity (mg/L as $CaCO_3$)	Ammonia mg/L NH_4^+
Lab Control (EPAMH)						8.2	84	60	
Lab Control (SSEPAMH)				8.25	243	8.3	88	70	
Station 3 - Arroyo Simi below HWY 118	13.3	8.00	1731	8.21	1666	8.4	556	264	16
Station 1 - Arroyo Simi above SVWQCP	14.4	8.30	2280	8.34	1892	8.7	1008	270	10
Station 11 - Conejo Creek	13.3	7.80	1489	8.32	1303	8.3	404	214	10

Table X. Summary of 7-day *Ceriodaphnia* toxicity test conducted on samples collected from the Calleguas Creek watershed on 2 December 1998.[2]

Treatment	Reproduction[1] (neonates/adult)		Mortality[1] (%)	Final pH at 24 hours
	x	se		
Laboratory Control	25.1[P]	1.3	10[P]	8.48
Station 3 - Arroyo Simi below HWY 118	27.3	0.7	0	8.68
Station 1 - Arroyo Simi above SVWQCP	25.9	0.8	0	8.36
Station 11 - Conejo Creek	*	*	100 (5)	8.63

P. The laboratory control met all EPA criteria for test acceptability. 90% of the daphnids had a third brood.

1. Highlighted cells indicate a significant reduction in reproduction or increase in mortality relative to the laboratory control water. The mortality endpoint was analyzed using Fisher's Exact Test. The reproductive endpoint was analyzed using Dunnett's Test ($p<0.05$).
2. This test was set up on 4 December 1998.

* Due to significant mortality observed in this sample, reproduction was not calculated.

(#) Number in parentheses represents days to 100% mortality.

Table X. Summary of *Ceriodaphnia* 96-hour Phase I TIE conducted on samples collected from Station 11: Conejo Creek on 2 December 1998.[1,2,4]

Treatment	Mortality for each day of the test[3]				Conclusions	Final pH
	1	2	3	4		at 24 hrs
Laboratory Control				0	Control met all EPA criteria for test acceptability.	8.20
Lab Control + Methanol				0	No artifactual toxicity present in control blank.	8.37
Lab Control + PBO			65	95	Artifactual toxicity present in control blank.	8.40
Lab Control adjusted to hardness (HA) 316 mg/L			5	5	No artifactual toxicity present in control blank.	8.49
Lab Control (HA) + 400 mg/L EDTA				0		8.24
Lab Control (HA) + 200 mg/L EDTA				5		8.36
Lab Control C8 Blank			5	5		8.41
Conejo Creek		100	100	100	Toxicity detected	8.51
Conejo Creek C8 Solid Phase Extracted Water				0	Decrease in mortality with C8 solid phase extraction suggests that the toxicity was due to a non-polar organic chemical.	8.53
Conejo Creek eluate at 3x	100	100	100	100	Toxicity detected	8.38
Conejo Creek eluate at 1x		5	5	5	No toxicity detected.	8.37
Conejo Creek + PBO				0	Decrease in mortality with the addition of PBO suggests that the toxicity was due to a metabolically activated organophosphorous pesticide.	8.40
Conejo Creek + 400 mg/L EDTA		100	100	100	No decrease in mortality with the addition of EDTA suggests that the toxicity was not due to a metal.	8.38
Conejo Creek + 200 mg/L EDTA		100	100	100		8.37
Conejo Creek + 100 mg/L EDTA	15	100	100	100		8.40

1. Four replicates with 18 mls of sample and 5 *Ceriodaphnia* each.
2. Daphnids were fed the standard EPA amount of food for only four hours a day.
3. Highlighted cells indicate areas of significant interest. No statisitcal analyses were done.
4. This test was set up on 12 December 1998.

Table X. Summary of *Ceriodaphnia* 96-hour Phase II TIE conducted on samples collected from Station 11: Conejo Creek on 2 December 1998.[1,2,4]

Treatment	Mortality for each day of the test[3]				Conclusions	Final pH
	1	2	3	4		at 24 hrs
Laboratory Control				0	Control met all EPA criteria for test acceptability.	8.31
Lab Control + Methanol				0	No artifactual toxicity present in control blank.	8.32
Conejo Creek 50% Fraction				0	No toxicity detected.	8.27
Conejo Creek 70% Fraction				0		8.30
Conejo Creek 75% Fraction		5	100	100	Toxicity detected	8.33
Conejo Creek 80% Fraction			100	100		8.34
Conejo Creek 85% Fraction				0	No toxicity detected.	8.32
Conejo Creek 90% Fraction				0		8.36
Conejo Creek 95% Fraction				0		8.37
Conejo Creek 100% Fraction				20		8.39

1. Four replicates with 18 mls of sample and 5 *Ceriodaphnia* each.
2. Daphnids were fed the standard EPA amount of food for only four hours a day.
3. Highlighted cells indicate areas of significant interest. No statisitcal analyses were done.
4. This test was set up on 18 December 1998.

Table X. Summary of 7-day *Pimephales* toxicity test conducted on samples collected from the Calleguas Creek watershed on 2 December 1998.[2]

Treatment	Growth[1] (mg/indiv)		Mortality (%)[1]		Final pH at 24 hours
	x	se	x	se	
Laboratory Control	0.407[P]	0.010	0[P]	0.0	8.11
Station 3 - Arroyo Simi below HWY 118	0.388	0.017	0.0	0.0	8.54
Station 1 - Arroyo Simi above SVWQCP	0.431	0.003	12.5	9.0	8.36
Station 11 - Conejo Creek	0.384	0.004	2.5	3.0	8.43

P. The laboratory control met the criteria for test acceptability.

1. Highlighted areas indicate a significant increase in mortality or decrease in growth when compared to the laboratory control. The growth and mortality endpoints were analyzed with Dunnett's Test ($p<.05$).
2. This test was set up on 4 December 1998.

Table X. Summary of water chemistry measurements on samples collected from the Calleguas Creek watershed on 2 December 1998.

Treatment	Field Temp (^{O}C)	Field pH	Field EC (µmhos/cm)	Lab pH	Lab EC (µmhos/cm)	Lab DO (mg/L)	Total Hardness (mg/L as $CaCO_3$)	Alkalinity (mg/L as $CaCO_3$)	Ammonia mg/L NH_4^+
Lab Control (EPAMH)				8.30	268	8.2	88	58	
Lab Control (SSEPAMH)				8.30	219	8.3	88	70	
Station 3 - Arroyo Simi below HWY 118	11.1	8.00	1680	8.23	1578	8.4	598	240	3
Station 1 - Arroyo Simi above SVWQCP	13.3	8.10	2030	8.41	2140	8.5	836	257	2
Station 11 - Conejo Creek	13.3	7.70	1095	8.11	503	8.6	316	170	15

Table X. Summary of 7-day *Ceriodaphnia* toxicity test conducted on samples collected from the Calleguas Creek watershed on 6 January 1999.[2]

Treatment	Reproduction[1] (neonates/adult)		Mortality[1] (%)	Final pH at 24 hours
	x	se		
Laboratory Control	21.8[P]	1.5	0[P]	8.58
Laboratory Control amended to 2000 µmhos	18.9	1.2	0	8.45
Station 3 - Arroyo Simi below HWY 118	0.8	0.3	0	8.60
Station 1 - Arroyo Simi above SVWQCP	26.2	0.9	0	8.28
Station 11 - Conejo Creek	2.9	0.7	0	8.61

P. The laboratory control met all EPA criteria for test acceptability. 100% of the daphnids had a third brood.

1. Highlighted cells indicate a significant reduction in reproduction or increase in mortality relative to the laboratory control water. The mortality endpoint was analyzed using Fisher's Exact Test. The reproductive endpoint was analyzed using Dunnett's Test ($p<0.05$).
2. This test was set up on 8 January 1999.

Table X. Summary of 7-day *Pimephales* toxicity test conducted on samples collected from the Calleguas Creek watershed on 6 January 1999.[2]

Treatment	Growth[1] (mg/indiv)		Mortality (%)[1]		Final pH at 24 hours
	x	se	x	se	
Laboratory Control	0.488[P]	0.019	2.5[P]	3.0	8.26
Station 3 - Arroyo Simi below HWY 118	0.281	0.029	45.0	10.0	8.39
Station 1 - Arroyo Simi above SVWQCP	0.642	0.045	22.5	13.0	8.14
Station 11 - Conejo Creek	0.381	0.005	30.0	11.0	8.44

P. The laboratory control met the criteria for test acceptability.

1. Highlighted areas indicate a significant increase in mortality or decrease in growth when compared to the laboratory control. The growth and mortality endpoints were analyzed with Dunnett's Test ($p<.05$).
2. This test was set up on 8 January 1999.

Table X. Summary of water chemistry measurements on samples collected from the Calleguas Creek watershed on 6 January 1999.

Treatment	Field Temp (^{o}C)	Field pH	Field EC (µmhos/cm)	Lab pH	Lab EC (µmhos/cm)	Lab DO (mg/L)	Total Hardness (mg/L as $CaCO_3$)	Alkalinity (mg/L as $CaCO_3$)	Ammonia mg/L NH_4^+
Lab Control (EPAMH)				8.01	285	8.0	80	58	
Lab Control (SSEPAMH)				8.41	214	8.3	84	64	
Station 3 - Arroyo Simi below HWY 118	10.0	7.97	2340	8.36	1682	8.5	484	254	21
Station 1 - Arroyo Simi above SVWQCP	11.1	8.25	2340	8.35	2157	8.2	948	254	0
Station 11 - Conejo Creek	11.1	7.90	1380	8.08	1250	8.4	432	224	21

Table X. Summary of 7-day *Ceriodaphnia* toxicity test conducted on samples collected from the Calleguas Creek watershed on 3 February 1999.[2]

Treatment	Reproduction[1] (neonates/adult)		Mortality[1] (%)	Final pH at 24 hours
	x	se		
Laboratory Control	20.9[P]	0.6	0[P]	8.11
Laboratory Control amended to 2000 µmhos	18.8	0.8	0	8.11
Station 3 - Arroyo Simi below HWY 118	0.8	0.5	20	8.07
Station 1 - Arroyo Simi above SVWQCP	16.6	0.6	0	8.17
Station 11 - Conejo Creek	7.2	2.4	10	8.13

Quality Assurance Samples

Blind Duplicate	Reproduction[1] (neonates/adult)		Mortality[1] (%)	Final pH at 24 hours
	x	se		
Station 3 - Arroyo Simi below HWY 118	0.8	0.5	20	8.07
Station 3 - Arroyo Simi below HWY 118 duplicate	*	*	50	7.92

P. The laboratory control met all EPA criteria for test acceptability. 100% of the daphnids had a third brood.

1. Highlighted cells indicate a significant reduction in reproduction or increase in mortality relative to the laboratory control water. The mortality endpoint was analyzed using Fisher's Exact Test. The reproductive endpoint was analyzed using Dunnett's Test ($p<0.05$).
2. This test was set up on 5 February 1999.

* Due to significant mortality observed in this sample, reproduction was not calculated.

Table X. Summary of 7-day *Pimephales* toxicity test conducted on samples collected from the Calleguas Creek watershed on 3 February 1999.[2]

Treatment	Growth[1] (mg/indiv)		Mortality (%)[1]		Final pH at 24 hours
	x	se	x	se	
Laboratory Control	0.380[P]	0.019	2.5[P]	3.0	8.14
Laboratory Control amended to pH 6.5	0.383	0.013	2.5	3.0	8.20
Station 3 - Arroyo Simi below HWY 118	*	*	100.0	0.0	8.52
Station 3 - Arroyo Simi below HWY 118 amended to pH 6.5	0.394	0.018	15.0	9.0	8.04
Station 1 - Arroyo Simi above SVWQCP	0.479	0.044	15.0	3.0	8.11
Station 11 - Conejo Creek	0.260	0.000	95.0	5.0	8.57
Station 11 - Conejo Creek amended to pH 6.5	0.433	0.009	7.5	3.0	8.14

Quality Assurance Samples

Treatment	Growth[1] (mg/indiv)		Mortality (%)[1]		Final pH at 24 hours
	x	se	x	se	
Station 3 - Arroyo Simi below HWY 118	*	*	100.0	0.0	8.52
Station 3 - Arroyo Simi below HWY 118 duplicate	*	*	100.0	0.0	8.61

P. The laboratory control met the criteria for test acceptability.

1. Highlighted areas indicate a significant increase in mortality or decrease in growth when compared to the laboratory control. The growth and mortality endpoints were analyzed with Dunnett's Test ($p<.05$).
2. The samples were collected on 3 February 1999. This test was set up on 5 February 1999.

Table X. Summary of water chemistry measurements on samples collected from the Calleguas Creek watershed on 3 February 1999.

Treatment	Field Temp (^{O}C)	Field pH	Field EC (µmhos/cm)	Lab pH	Lab EC (µmhos/cm)	Lab DO (mg/L)	Total Hardness (mg/L as $CaCO_3$)	Alkalinity (mg/L as $CaCO_3$)	Ammonia mg/L NH_4^+
Lab Control (EPAMH)				8.20	300	8.2	96	60	
Lab Control (SSEPAMH)				8.14	289	8.3	88	66	
Station 3 - Arroyo Simi below HWY 118	11.7	8.00	1690	8.07	1630	8.4	564	276	30
Station 1 - Arroyo Simi above SVWQCP	11.7	8.20	2330	8.17	2210	8.4	996	192	0.2
Station 11 - Conejo Creek	10.9	8.00	1380	8.13	1213	8.4	404	224	30

Table X. Summary of 7-day *Ceriodaphnia* toxicity test conducted on samples collected from the Calleguas Creek watershed on 3 March 1999.[2]

Treatment	Reproduction[1] (neonates/adult)		Mortality[1] (%)	Final pH at 24 hours
	x	se		
Laboratory Control	23.5[P]	0.6	0[P]	8.33
Laboratory Control amended to 2000 µmhos/cm	21.2	1.1	0	8.24
Station 3 - Arroyo Simi below HWY 118	*	*	90	8.55
Station 1 - Arroyo Simi above SVWQCP	23.4	0.8	0	8.19
Station 11 - Conejo Creek	17.7	2.2	0	8.53

P. The laboratory control met all EPA criteria for test acceptability. 100% of the daphnids had a third brood.

1. Highlighted cells indicate a significant reduction in reproduction or increase in mortality relative to the laboratory control water. The mortality endpoint was analyzed using Fisher's Exact Test. The reproductive endpoint was analyzed using Dunnett's Test ($p<.05$).
2. This test was set up on 4 June 1999.

* Due to significant mortality observed in this sample, reproduction was not calculated.

Table X. Summary of *Ceriodaphnia* 96-hour PBO TIE conducted on samples collected from Station 3: Arroyo Simi below Hwy. 118 on 7 April 1999.[1,2,4]

Treatment	Mortality for each day of the test[3]							Conclusions	Final pH at 96 hrs
	1	2	3	4	5	6	7		
Laboratory Control							0	Laboratory control met all EPA criteria for test acceptability.	8.27
Laboratory Control + PBO		5	5	5	5	5	5	No artifactual toxicity present in control blank.	8.22
Station 3 - Arroyo Simi below HWY 118	5	5	5	10	10	21	21	The lack of significant mortality in the ambient sample suggests that toxicity was lost due to storage time.	8.57
Station 3 - Arroyo Simi below HWY 118 + PBO							0	Due to the lack of significant mortality in the ambient sample, the results of the addition of PBO are inconlusive.	8.56

1. Four replicates with 18 mls of sample and 5 *Ceriodaphnia* each.
2. Daphnids were fed the standard EPA amount of food for only four hours a day.
3. Highlighted cells indicate areas of significant interest. No statisitcal analyses were done.
4. This test was set up on 12 March 1999.

Table X. Summary of 7-day *Pimephales* toxicity test conducted on samples collected from the Calleguas Creek watershed on 3 March 1999.[2]

Treatment	Growth[1] (mg/indiv)		Mortality (%)[1]		Final pH at 24 hours
	x	se	x	se	
Laboratory Control	0.359[P]	0.009	0[P]	0.0	8.05
Laboratory Control amended to pH 6.5	0.427	0.013	2.5	3.0	7.69
Station 3 - Arroyo Simi below HWY 118	0.127	0.017	75.0	13.0	8.32
Station 3 - Arroyo Simi below HWY 118 amended to pH 6.5	0.356	0.029	5.0	3.0	7.95
Station 1 - Arroyo Simi above SVWQCP	0.406	0.052	47.5	10.0	8.08
Station 11 - Conejo Creek	0.220	0.022	77.5	11.0	8.36
Station 11 - Conejo Creek amended to pH 6.5	0.327	0.001	7.5	3.0	7.98

P. The laboratory control met the criteria for test acceptability.

1. Highlighted areas indicate a significant increase in mortality or decrease in growth when compared to the laboratory control. The growth and mortality endpoints were analyzed with Dunnett's Test ($p<.05$).
2. This test was set up on 5 March 1999.

Table X. Summary of water chemistry measurements on samples collected from the Callelguas Creek watershed on 3 March 1999.

Treatment	Field Temp (^{O}C)	Field pH	Field EC (µmhos/cm)	Lab pH	Lab EC (µmhos/cm)	Lab DO (mg/L)	Total Hardness (mg/L as $CaCO_3$)	Alkalinity (mg/L as $CaCO_3$)	Ammonia mg/L NH_4^+
Lab Control (EPAMH)				8.26	219	8.4	80	62	
Lab Control (SSEPAMH)				8.26	219	8.4	86	68	
Station 3 - Arroyo Simi below HWY 118	13.3	8.00	1776	8.23	1653	8.2	592	254	24
Station 1 - Arroyo Simi above SVWQCP	15.6	8.00	2390	8.35	2216	8.3	1004	258	0
Station 11 - Conejo Creek	13.0	7.90	1440	8.14	1198	8.3	412	212	24

Table X. Summary of 7-day *Ceriodaphnia* toxicity test conducted on samples collected from the Calleguas Creek watershed on 7 April 1999.[2]

Treatment	Reproduction[1] (neonates/adult)		Mortality[1] (%)	Final pH at 24 hours
	x	se		
Laboratory Control	19.1[P]	0.8	0[P]	8.34
Station 3 - Arroyo Simi below HWY 118	*	*	70[3]	8.26
Station 1 - Arroyo Simi above SVWQCP	*	*	100 (3)	8.32
Station 11 - Conejo Creek	21.1	0.7	0	8.47

P. The laboratory control met all EPA criteria for test acceptability. 100% of the daphnids had a third brood.

1. Highlighted cells indicate a significant reduction in reproduction or increase in mortality relative to the laboratory control water. The mortality endpoint was analyzed using Fisher's Exact Test. The reproductive endpoint was analyzed using a t-test ($p<0.05$).
2. This test was set up on 9 April 1999.
3. This treatment was mistakenly taken down on day 4, so the mortality denoted represents the amount of mortality observed by day 4.

* Due to significant mortality observed in this sample, reproduction was not calculated.

(#) Number in parentheses represents days to 100% mortality.

Table X. Summary of *Ceriodaphnia* 96-hour Phase I TIE conducted on samples collected from Station 1: Arroyo Simi above SVWQCB and Station 3: Arroyo Simi below Hwy. 118 on 7 April 1999.[1,2,4]

Treatment	Mortality for each day of the				Conclusions	Final pH
	1	2	3	4		at 96 hrs
Laboratory Control			5	5	Control met all EPA criteria for test acceptability.	8.19
Laboratory Control + 100 ppb PBO				0	No artifactual toxicity present in control blanks.	8.37
Laboratory Control + Methanol				0		8.27
Laboratory Control C8 blank for Station				0		8.36
Laboratory Control C8 blank for Station			5	5		8.35
Station 3 - Arroyo Simi below HWY			10	95	Toxicity detected.	7.95
Station 3 + 100 ppb PBO				0	Elimination of toxicity with the addition of PBO suggests that toxicity was due to a metabolically activated OP pesticide.	7.97
Staion 3 C8 Solid Phase Extracted Water				0	Elimination of toxicity with solid phase extraction suggests that toxicity was due to a non-polar organic chemical.	8.37
Station 3 eluate added back to lab control water at 1x				0	No toxicity detected in the 1x eluate suggests that recovery of the toxicant off of the column is less than 100%.	8.35
Station 3 eluate added back to lab control water at 3x	85	100	100	100	Toxicity detected in the eluate added back to control water suggests that toxicity was due to a non-polar organic chemical.	8.30
Station 1 - Arroyo Simi above		76	100	100	Toxicity detected.	8.32
Station 1 + 100 ppb PBO		5	5	5	Decrease in mortality with the addition of PBO suggests that toxicity was due to metabolically activated OP pesticide.	8.31
Staion 1 C8 Solid Phase Extracted Water				0	Elimination of toxicity with solid phase extraction suggests that toxicity was due to a non-polar organic chemical.	8.41
Station 1 eluate added back to lab control water at 1x				0	No toxicity detected in the 1x eluate suggests that recovery of the toxicant off of the column is less than 100%.	8.32
Station 1 eluate added back to lab control water at 3x	90	100	100	100	Toxicity detected in the eluate added back to control water suggests that toxicity was due to a non-polar organic chemical.	8.25

1. Four replicates with 18 mls of sample and 5 *Ceriodaphnia* each.
2. Daphnids were fed the standard EPA amount of food for only four hours a day.
3. Highlighted cells indicate areas of significant interest. No statisitcal analyses were done.
4. The site was sampled on 7 April 1999. This test was set up on 15 April 1999.

Table X. Summary of 7-day *Pimephales* toxicity test conducted on samples collected from the Calleguas Creek watershed on 7 April 1999.[2]

Treatment	Growth[1] (mg/indiv)		Mortality (%)[1]		Final pH at 24 hours
	x	se	x	se	
Laboratory Control	0.285[P]	0.006	12.5[P]	6.0	8.18
Laboratory Control amended to pH 6.5	0.281	0.016	5.3	3.0	7.97
Station 3 - Arroyo Simi below HWY 118	0.242	0.012	7.5	5.0	8.18
Station 1 - Arroyo Simi above SVWQCP	0.181	0.046	2.8	3.0	8.27
Station 11 - Conejo Creek	0.271	0.016	38.4	8.0	8.37
Station 11 - Conejo Creek amended to pH 6.5	0.312	0.018	15.0	3.0	7.79

P. The laboratory control met the criteria for test acceptability.

1. Highlighted areas indicate a significant increase in mortality or decrease in growth when compared to the laboratory control. The growth and mortality endpoints were analyzed with Dunnett's Test ($p<.05$).
2. This test was set up on 9 April 1999.

Table X. Summary of water chemistry measurements on samples collected from the Calleguas Creek watershed on 7 April 1999.

Treatment	Field Temp (^{o}C)	Field pH	Field EC (µmhos/cm)	Lab pH	Lab EC (µmhos/cm)	Lab DO (mg/L)	Total Hardness (mg/L as $CaCO_3$)	Alkalinity (mg/L as $CaCO_3$)	Ammonia mg/L NH_4^+
Lab Control (EPAMH)				8.18	282	8.6	84	62	
Lab Control (SSEPAMH)				8.18	229	8.6	92	68	
Station 3 - Arroyo Simi below HWY 118	11.7	7.80	812	8.00	777	8.5	264	124	9.6
Station 1 - Arroyo Simi above SVWQCP	11.1	8.00	913	8.18	869	8.4	344	126	18
Station 11 - Conejo Creek	14.8	7.80	1097	8.12	949	8.7	308	182	0.2

Table X. Summary of 7-day *Ceriodaphnia* toxicity test conducted on samples collected from the Calleguas Creek watershed on 5/5/99.[2]

Treatment	Reproduction[1] (neonates/adult)		Mortality[1] (%)	Final pH at 24 hours
	x	se		
Laboratory Control (SSEPAMH)	17.9[P]	2.4	10.0[P]	8.45
Laboratory Control (SSEPAMH) amended to 2000 µmhos/cm	18.1	2.1	10	8.39
Station 3 - Arroyo Simi below HWY 118	15.7	1.5	0	8.68
Station 1 - Arroyo Simi above SVWQCP	24.5	1.2	0	8.30
Station 11 - Conejo Creek	17.2	2.4	0	8.66

P. The laboratory control met all EPA criteria for test acceptability. 70% of the daphnids had a third brood.

1. Highlighted cells indicate a significant reduction in reproduction or increase in mortality relative to the laboratory control water. The mortality endpoint was analyzed using Fisher's Exact Test. The reproductive endpoint was analyzed using Dunnett's Test ($p<.05$).
2. This test was set up on 5/7/99.

Table X. Summary of 7-day *Pimephales* toxicity test conducted on samples collected from the Calleguas Creek watershed on 5/5/99.[2]

Treatment	Growth[1] (mg/indiv)		Mortality (%)[1]		Final pH at 24 hours
	x	se	x	se	
Laboratory Control	0.509[P]	0.018	2.5[P]	3.0	8.10
Laboratory Control amended to pH 6.5	0.518	0.020	0.0	0.0	7.84
Station 3 - Arroyo Simi below HWY 118	0.269	0.019	82.5	8.0	8.45
Station 3 - Arroyo Simi below HWY 118 amended to pH 6.5	0.508	0.015	10.0	4.0	8.04
Station 1 - Arroyo Simi above SVWQCP	0.582	0.031	27.5	5.0	8.25
Station 11 - Conejo Creek	0.473	0.025	2.5	3.0	8.51

P. The laboratory control met the criteria for test acceptability.

1. Highlighted areas indicate a significant increase in mortality or decrease in growth when compared to the laboratory control. The growth and mortality endpoints were analyzed with Dunnett's Test ($p<.05$).
2. This test was set up on 5/7/99.

Table X. Summary of water chemistry measurements on samples collected from the Callegauas Creek watershed on 5/5/99.

Treatment	Field Temp (^{o}C)	Field pH	Field EC (µmhos/cm)	Lab pH	Lab EC (µmhos/cm)	Lab DO (mg/L)	Total Hardness (mg/L as $CaCO_3$)	Alkalinity (mg/L as $CaCO_3$)	Ammonia mg/L NH_4^+
Lab Control (SSEPAMH)				8.24	231	8.4	96	64	
Station 1 - Arroyo Simi above SVWQCP	16.7	8.20	2430	8.32	2453	8.4	596	240	18
Station 3 - Arroyo Simi below HWY 118	15.6	7.90	1812	8.42	1794	8.2	1020	242	0
Station 11 - Conejo Creek	15.0	7.80	1100	8.29	1259	8.2	420	188	12

Table X. Summary of 7-day *Ceriodaphnia* toxicity test conducted on samples collected from the Calleguas Creek watershed on 2 June 1999.[2]

Treatment	Reproduction[1] (neonates/adult)		Mortality[1] (%)	Final pH at 24 hours
	x	se		
Laboratory Control	24.1[P]	0.6	0[P]	8.46
Station 3 - Arroyo Simi below HWY 118	12.2	2.4	10	8.50
Station 1 - Arroyo Simi above SVWQCP	*	*	100 (1)	8.46
Station 11 - Conejo Creek	27.0	1.5	0	8.60

P. The laboratory control met all EPA criteria for test acceptability. 100% of the daphnids had a third brood.

1. Highlighted cells indicate a significant reduction in reproduction or increase in mortality relative to the laboratory control water. The mortality endpoint was analyzed using Fisher's Exact Test. The reproductive endpoint was analyzed using Dunnett's Test ($p<.05$).
2. This test was set up on 4 June 1999.

* Due to significant mortality observed in this sample, reproduction was not calculated.

(#) Number in parentheses represents days to 100% mortality.

Table X. Summary of *Ceriodaphnia* 96-hour PBO TIE conducted on samples collected from Station 1: Arroyo Simi above SVWQCP on 2 June 1999.[1,2,4]

Treatment	Mortality for each day of the test[3]				Conclusions	Final pH at 24 hrs
	1	2	3	4		
Laboratory Control				0	Control met all EPA criteria for test acceptability.	8.55
Laboratory Control + PBO				0	No artifactual toxicity present in control blanks.	8.48
Laboratory Control + MeOH				0		8.52
Laboratory Control C8 Method Blank				0		8.6
Station 1 - Arroyo Simi above SVWQCP	95	100	100	100	Toxicity detected	8.51
Station 1 - Arroyo Simi above SVWQCP + PBO				0	Decrease in mortality with the addition of PBO suggests that the toxicity was due to a metabolically activated organophosphorous pesticide.	8.5
Station 1 - Arroyo Simi above SVWQCP C8 Solid Phase Extracted Water				0	Decrease in mortality with C8 solid phase extraction suggests that toxicity was due to a non-polar organic chemical(s).	8.55
Station 1 - Arroyo Simi above SVWQCP eluate at 1X		95	100	100	Toxicity detected in eluate add-back suggests that toxicity was due to a non-polar organic chemical(s).	8.5
Station 1 - Arroyo Simi above SVWQCP eluate at 3X	100	100	100	100		8.51

1. Four replicates with 18 mls of sample and 5 *Ceriodaphnia* each.
2. Daphnids were fed the standard EPA amount of food for only four hours a day.
3. Highlighted cells indicate areas of significant interest. No statisitcal analyses were done.
4. This test was set up on 8 June 1999.

Table X. Summary of 7-day *Pimephales* toxicity test conducted on samples collected from the Calleguas Creek watershed on 2 June 1999.[2]

Treatment	Growth[1] (mg/indiv)		Mortality (%)[1]		Final pH at 24 hours
	x	se	x	se	
Laboratory Control	0.318[P]	0.016	0[P]	0.0	8.21
Laboratory Control amended to pH 6.5	0.312	0.014	0.0	0.0	7.92
Station 3 - Arroyo Simi below HWY 118	0.193	0.051	82.5	8.0	8.45
Station 3 - Arroyo Simi below HWY 118 amended to pH 6.5	0.307	0.023	5.0	3.0	7.91
Station 1 - Arroyo Simi above SVWQCP	0.338	0.022	5.0	3.0	8.43
Station 11 - Conejo Creek	0.318	0.018	2.5	3.0	8.59

P. The laboratory control met the criteria for test acceptability.

1. Highlighted areas indicate a significant increase in mortality or decrease in growth when compared to the laboratory control. The growth and mortality endpoints were analyzed with Dunnett's Test ($p<.05$).
2. This test was set up on 4 June 1999.

Table X. Summary of water chemistry measurements on samples collected from the Calleguas Creek watershed on 2 June 1999.

Treatment	Field Temp (^{o}C)	Field pH	Field EC (µmhos/cm)	Lab pH	Lab EC (µmhos/cm)	Lab DO (mg/L)	Total Hardness (mg/L as $CaCO_3$)	Alkalinity (mg/L as $CaCO_3$)	Ammonia mg/L NH_4^+
Lab Control (EPAMH)				8.43	295	7.6	92	60	
Lab Control (SSEPAMH)				8.26	247	8.4	92	76	
Station 3 - Arroyo Simi below HWY 118				8.17	1744	8.3	688	246	21
Station 1 - Arroyo Simi above SVWQCP				8.20	1696	8.3	720	210	1.2
Station 11 - Conejo Creek				8.30	1696	8.3	384	182	0.2