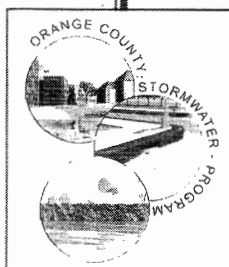


UNIFIED ANNUAL PROGRESS REPORT PROGRAM EFFECTIVENESS ASSESSMENT

2002-2003 Reporting Period



November 15, 2003



A COOPERATIVE PROJECT OF THE COUNTY OF
ORANGE, THE CITIES OF ORANGE COUNTY, AND
THE ORANGE COUNTY FLOOD CONTROL DISTRICT

Table C-11.8
Water Chemistry for the Bioassessment Sampling Periods

Site	Date	Samples		Field Measurements				Turbidity NTU	Specific Conductance µS	pH	Nitrate as NO ₃	Ammonia as N	TKN	Tot Phosphate as PO ₄ mg/L	ortho phosphate as P	TSS	VSS	Diazinon	Chlorpyrifos	Dimethoate	Malathion											Hardness as CaCO ₃ mg/L																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
		Type	#	EC µS	pH	TEMP C	DO mg/L																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
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Water Chemistry for the Bioassessment Sampling Periods

Site	Date	Samples Type	#	Field Measurements				Turbidity NTU	Specific Conductance μ S	pH	Nitrate as NO ₃	Ammonia as N	TKN	Tot Phosphate as PO ₄ mg/L	ortho phosphate as P	TSS	VSS	Diazinon	Chlorpyrifos	Dimethoate	Malathion	Cd	Cr	Cu	Pb	Ni	Ag	Zn	As	Se	Hardness as CaCO ₃ mg/L										
				EC μ S	pH	TEMP C	DO mg/L															μ g/L																			
SJC 74	6/25/03	DF	1																			<1.0	<8.0	<2.0	<2.0	<4.0	<2.0	<10	<2.0	<2.0											
SJC-CC	11/7/02	DT	1					22	3700	7.5	<0.44	0.091	0.5	0.275	<0.01	16	<10	<50	<50			<1.0	<8.0	3.2	<2.0	<4.0	<2.0	<10	7.1	11	1234										
SJC-CC	11/7/02	DF	1																			<1.0	<8.0	15	<2.0	17	<2.0	55	3.4	9											
SJC-CC	11/27/02	DT	1																			2.2	<8.0	6.8	<2.0	<4.0	<2.0	20	2.8	6.5											
SJC-CC	11/27/02	DF	1																																						
SJC-CC	6/12/03 11:50	DT	1					3.3	1850	7.6	0.53	<0.05	0.34	0.306	0.037	<5	<5	<10	<10	<10	<10	<1.0	<8.0	<2.0	3.4	4.5	<2.0	<10	<2.0	<2.0	618										
SJC-CC	6/12/03 11:50	DF	1																			<1.0	<8.0	<2.0	<2.0	5	<2.0	13	0	0											
TC-AP	11/14/02 10:30	DT	1					1.2	1320	8	<0.44	<0.05	0.31	0.214	0.063	<10	<10	<50	<50			<1.0	<8.0	<2.0	<2.0	<4.0	<2.0	<10	2.8	<2.0	436										
TC-AP	11/14/02 10:30	DF	1																			<1.0	<8.0	2.4	<2.0	<4.0	<2.0	25	2.8	<2.0											
TC-AP	6/17/03	DT	1	1015	8.4		8.2	1.9	1050	8.3	<0.44	<0.05	<0.2	0.337	0.093	<10	<10	<10	<10	<10	<10	<1.0	<8.0	2	<2.0	<4.0	<2.0	<10	0	0	378										
TC-AP	6/17/03	DF	1																																						
TC-DO	11/7/02	DT	1					1.4	2840	7.1	<0.44	<0.05	0.42	0.0918	<0.01	<10	<10	<50	<50			<1.0	<8.0	6.9	<2.0	8.4	<2.0	<10	5	11	1016										
TC-DO	11/7/02	DF	1																			<1.0	<8.0	12	<2.0	9.6	<2.0	26	4.2	9.4											
TC-DO	6/12/03 11:00	DT	1		8.4	22.1	12.0	1.2	2010	8.6	<0.44	<0.05	0.44	0.122	0.028	<5	<5	<10	<10	<10	<10	<1.0	<8.0	2.1	<2.0	4.7	<2.0	<10	<2.0	<2.0	700										
TC-DO	6/12/03 11:00	DF	1																			<1.0	<8.0	6.4	<2.0	4.3	<2.0	<10	<2.0	8.9											
WCT-WCT	11/15/02 10:00	DT	1					7.3	2270	8	11	<0.05	0.48	0.857	0.272	15	<10	300	<50			<1.0	<8.0	3.4	<2.0	<4.0	<2.0	<10	6.9	24	732										
WCT-WCT	11/15/02 10:00	DF	1																			<1.0	<8.0	3.6	<2.0	<4.0	<2.0	<10	7	25											

Table C-11.10
Flow-Weighted Event Mean Concentrations from Sampled Storms 2002-2003

		Volume Sampled ac-ft	type	Nitrate as NO ₃	NH ₃ as N	TKN	Tot Phosphate as PO4	Ortho P as P	TSS	VSS	Cd	Cr	Cu	Pb	Ni	Ag	Zn	As	Se	Hardness as CaCO ₃									
				mg/L																µg/L									
ACJ01	Dec 16-18, 2002	518 ST	7	0.19	1.9	0.95	0.32	52	5	11.7	30.1	44.3	11.3	49	<2.0	184.7	9.6	3.9		349									
		518 SF							dissolved		<1.0	<8.0	3.5	<2.0	11.6	<2.0	<10	2.1	1.9										
	Dec 19-21, 2002	646 ST	5.7	0.18	1.8	2.02	0.33	270	28	2.7	11.9	15.9	4.8	26.1	<2.0	59.6	5.7	4.3		415									
		646 SF							dissolved		<1.0	<8.0	4.7	<2.0	15.2	<2.0	5.1	3	3.6										
	Feb 25-28, 2003	2163 ST	3.6	0.14	1.9	1.87	0.27	290	32	3.6	9.7	17.8	4.7	27.5	<2.0	71	<2.0	<2.0		294									
		2163 SF							dissolved		<1.0	<8.0	4.7	<2.0	16.2	<2.0	12.9	<2.0	<2.0										
	Mar 15-19, 2003	3673 ST	3.94	0.13	3.54	3.72	0.27	1295	137	6	44.8	43.7	20.1	44	<2.0	184.2	<2.0	<2.0		525									
		3673 SF							dissolved		0.6	<8.0	11.5	<2.0	9.1	<2.0	5.1	<2.0	<2.0										
	Apr 14-18, 2003	997 ST	3.14	0.17	1.74	1.6	0.23	222.4	35.4	2.6	<8.0	10.2	<2.0	28.4	<2.0	18.5	<2.0	<2.0		394									
		813 SF							dissolved		0.6	<8.0	6.2	<2.0	13.5	<2.0	5.7	<2.0	<2.0										
May 03-07, 2003	335 ST	3.85	0.13	1.16	0.82	0.2	38.4	5	2.7	<8.0	12.1	<2.0	22.9	<2.0	28.1	<2.0	<2.0		415										
	335 SF							dissolved		1.6	<8.0	7.6	<2.0	20.2	<2.0	19.9	<2.0	<2.0											
SJNL01	Dec 16-21, 2002	217 ST	6.14	0.1	1.21	2.78	0.5	395.3	45.4	1.4	19.2	30.3	7	16.7	<2.0	86.1	7.8	2.4		307									
		217 SF							dissolved		<1.0	<8.0	4.4	<2.0	<4.0	<2.0	<10	3.9	1.8										
	Feb 25-Mar 01, 2003	1070 ST	4.91	0.11	2.08	2.16	0.39	385	53.2	0.9	9.3	34.6	9	14.9	<2.0	91	<2.0	<2.0		253									
		1070 SF							dissolved		<1.0	<8.0	6.2	<2.0	6.6	<2.0	10.5	<2.0	<2.0										
	Apr 14-18, 2003	569 ST	5.2	0.06	1.04	1.2	0.25	118.1	18.1	0.8	<8.0	8.9	2.5	3.9	<2.0	37.6	<2.0	<2.0		318									
		569 SF							dissolved		<1.0	<8.0	5	<2.0	<4.0	<2.0	11.8	<2.0	<2.0										
	May 04-07, 2003	56 ST	3.7	0.03	0.51	0.31	0.08	5	5	<1.0	<8.0	5.4	<2.0	<4.0	<2.0	<10	<2.0	<2.0		456									
		56 SF							dissolved		<1.0	<8.0	6.1	<2.0	<4.0	<2.0	<10	<2.0	<2.0										
TCOL02	Dec 17-21, 2002	509 ST	4.61	0.13	2.45	4.03	0.18	160	12	1.8	21.5	27.1	8	17.4	<2.0	84.4	8	3.2		449									
		509 SF							dissolved		<1.0	<8.0	5.1	<2.0	2.4	<2.0	<10	2.6	2.4										
	Feb 24-Mar 01, 2003	1944 ST	3.53	0.14	3.33	4.5	0.2	1892	142.3	3.8	54.5	100.3	26.4	52.9	<2.0	259.9	<2.0	<2.0		246									
		1944 SF							dissolved		<1.0	<8.0	5	<2.0	2.8	<2.0	<10	<2.0	<2.0										
	Mar 16-19, 2003	1272 ST	5.7	0.19	2.42	2.47	0.11	966.2	83.5	1.8	36.1	40.8	12.1	27.4	<2.0	127.4	<2.0	<2.0		280									
		1272 SF							dissolved		<1.0	<8.0	5.4	<2.0	<4.0	<2.0	<10	<2.0	<2.0										
	Apr 15-18, 2003	45 ST	3.95	0.05	0.66	0.7	0.14	113.1	5	<1.0	<8.0	8.8	<2.0	8.6	<2.0	23	<2.0	<2.0		384									
		45 SF							dissolved		<1.0	<8.0	4.1	<2.0	5.1	<2.0	<10	<2.0	<2.0										

Table C-11.12
Toxicity Test Results for Mass Loading Stations

Station	Site Name	Event	Chronic Sea Urchin Development			Chronic Sea Urchin Fertilization			Chronic Mysidopsis Bahia Survival and Growth					
			NOEC	96 hr IC50	TUc	NOEC	96 hr IC50	TUc	Survival			Growth		
									NOEC	96hr IC50	TUa	NOEC	96hr IC50	TUc
ACJ01	Aliso Creek @ spillway	18-Dec-02	50.00	81.06	2.00	50.00	>100.00	2.00	100.00	>100.00	0.97	100.00	>100.00	1.00
		16-Apr-03	50.00	77.68	2.00	6.25	44.82	16.00	100.00	>100.00	0.41	100.00	>100.00	1.00
		5-May-03	50.00	80.70	2.00	12.50	81.64	8.00	100.00	>100.00	0.59	100.00	>100.00	1.00
LCWI02	Laguna Canyon Wash	16-Apr-03	50.00	75.78	2.00	12.50	38.23	8.00	100.00	>100.00	0	100.00	>100.00	1.00
		5-May-03	50.00	>100.	2.00	25.00	>100.00	4.00	100.00	>100.00	0.23	100.00	>100.00	1.00
PDCM01	Prima Deshecha channel	18-Dec-02	25.00	40.34	4.00	12.50	44.54	8.00	50.00	87.76	1.14	100.00	>100.00	1.00
		16-Apr-03	25.00	71.95	4.00	6.25	42.65	16.00	100.00	>100.00	0.73	100.00	>100.00	1.00
		5-May-03	50.00	76.45	2.00	50.00	>100.00	2.00	100.00	>100.00	0.73	100.00	>100.00	1.00
SDCM02	Segunda Deshecha channel	18-Dec-02	50.00	72.54	2.00	25.00	55.11	4.00	100.00	>100.00	0.41	100.00	>100.00	1.00
		16-Apr-03	25.00	71.95	4.00	6.25	42.65	16.00	100.00	>100.00	0.41	100.00	>100.00	1.00
		5-May-03	100.00	>100.00	1.00	12.50	91.03	8.00	100.00	>100.00	0.41	100.00	>100.00	1.00
SJNL01	San Juan Creek @ La Novia	18-Dec-02	50.00	79.58	2.00	25.00	>100.00	4.00	100.00	>100.00	0.65	100.00	>100.00	1.00
		16-Apr-03	100.00	>100.00	1.00	25.00	84.79	4.00	100.00	>100.00	0	100.00	>100.00	1.00
		5-May-03	100.00	>100.00	1.00	25.00	>100.00	4.00	100.00	>100.00	0.59	100.00	>100.00	1.00
TCOL02	Trabuco Creek @ Del Obispo	18-Dec-02	50.00	79.75	2.00	50.00	72.25	2.00	100.00	>100.00	0.51	100.00	>100.00	1.00
		16-Apr-03	50.00	74.98	2.00	6.25	40.15	16.00	100.00	>100.00	0	100.00	>100.00	1.00
		5-May-03	50.00	>100.00	2.00	25.00	89.90	4.00	100.00	>100.00	0	100.00	>100.00	1.00

Table C-11.14
Toxicity Test Results at Ambient Coastal Monitoring Stations

Station	Site Name	Event	Chronic Sea Urchin Development			Chronic Sea Urchin Fertilization			Chronic Mysidopsis Bahia Survival and Growth					
			NOEC	96 hr IC50	TUc	NOEC	96 hr IC50	TUc	Survival			Growth		
									NOEC	96hr IC50	TUa	NOEC	96hr IC50	TUc
ACM-1	Aliso Creek mouth	12-Feb-03	100.00	>100.00	1.00	25.00	>100.00	4.00	100.00	>100.00	1.00	100.00	>100.00	1.00
		1-Jul-03	100.00	>100.00	1.00	100.00	>100.00	1.00	100.00	>100.00	0	100.00	>100.00	1.00
DAPTEB	Dana Point Harbor - East Basin	1-Jul-03	50.00	82.30	2.00	100.00	>100.00	1.00	100.00	>100.00	0.41	100.00	>100.00	1.00
DAPTWB	Dana Point Harbor - West Basin	1-Jul-03	100.00	>100.00	1.00	100.00	>100.00	1.00	100.00	>100.00	0	100.00	>100.00	1.00
DP-OCI	Dana Point Harbor at Ocean Inst.	1-Jul-03	100.00	>100.00	1.00	100.00	>100.00	1.00	100.00	>100.00	0	100.00	>100.00	1.00
DSB5	N. Beach Creek @ Doheny St. Park	12-Feb-03	50.00	83.40	2.00	12.50	55.93	8.00	100.00	>100.00	0.77	100.00	>100.00	1.00
DSB-4	Doheny St. Beach, north end	26-Feb-03	25.00	68.64	4.00	12.50	71.72	8.00	100.00	>100.00	0.69	100.00	>100.00	1.00
DSB-1	Doheny St. Beach, south end	26-Feb-03	25.00	79.84	4.00	<12.50	36.17	>8.00	100.00	>100.00	0.23	100.00	>100.00	1.00
LB-2	Laguna Beach MLR @ rockpiles	12-Feb-03	50.00	90.25	2.00	25.00	62.85	4.00	100.00	>100.00	0.87	100.00	>100.00	1.00
LB-3	Laguna Beach MLR @ main beach	12-Feb-03	12.50	51.56	8.00	12.50	52.29	8.00	50.00	>100.00	0.87	100.00	>100.00	1.00
LB-4	Laguna Beach MLR @ s. main beach	26-Feb-03	12.50	34.88	8.00	25.00	50.58	4.00	100.00	>100.00	0.41	100.00	>100.00	1.00
SCM-1	Salt Creek mouth	18-Dec-02	50.00	75.94	2.00	25.00	73.17	4.00	50.00	>100.00	0.93	100.00	>100.00	1.00
		12-Feb-03	50.00	>100.00	2.00	25.00	91.03	4.00	100.00	>100.00	0.96	100.00	>100.00	1.00
		1-Jul-03	100.00	>100.00	1.00	100.00	>100.00	1.00	50.00	71.15	1.15	100.00	>100.00	1.00
SJC-1	San Juan Creek mouth	12-Feb-03	50.00	>100.00	2.00	12.50	>100.00	8.00	100.00	>100.00	0.89	100.00	>100.00	1.00
		1-Jul-03	100.00	>100.00	1.00	100.00	>100.00	1.00	100.00	>100.00	0.77	100.00	>100.00	1.00

Table C-11.15
Water Chemistry at Ambient Coastal Monitoring Stations

Site	Date	Samples Type	#	Field Measurements				Turbidity NTU	Specific Conductance μS	pH	Nitrate as NO ₃	Ammonia as N	TKN	Tot Phosphate as PO ₄	ortho phosphate as P	TSS	VSS	Diazinon	Chlorpyrifos	Dimethoate	Malathion	Cd	Cr	Cu	Pb	Ni	Ag	Zn	As	Se	Hardness as CaCO ₃ mg/L
				EC μS	pH	TEMP C	DO mg/L																								
AB-1	2/11/03	DT	1					406	167	9.7	2.9	0.5	3.1	3.98	0.555	320	56	<10	<10			<1.0	57	97	24	49	<2.0	450	6	<2.0	
AB-1	2/11/03	DF	1																			<1.0	<8.0	19	<2.0	<4.0	<2.0	14	2	<2.0	
ACM 1	12/20/02	ST	1					185	466	7.9	3.1	0.198	1.7	1.65	0.242	360	38	212	<10			<1.0	<8.0	3.8	<2.0	4.3	<2.0	<10	2.4	<2.0	140
ACM 1	12/20/02	SF	1																												
ACM 1	2/11/03	DT	1					3.4	5320	8.1	1.5	<0.05	0.56	0.398	0.104	<10	<10	68	<10			1.4	<8.0	2	<2.0	17	<2.0	10	2.5	3.1	1166
ACM 1	2/11/03	DF	1																			<1.0	<8.0	<2.0	<2.0	16	<2.0	11	2.3	3.1	
ACM 1	3/4/03	DT	1	22830	7.8	14.2	10.9	4.8	21200	8	3.4	<0.05	0.55	0.52	0.158	<10	<10	<10	<10			1.2	<8.0	<2.0	<2.0	25	<2.0	<10			2640
ACM 1	3/4/03	DF	1																			<1.0	<8.0	<2.0	<2.0	25	<2.0	<10			
ACM 1	6/30/03	DT	1	30660	8.0	21.3	9.9	5.1	34900	8.1	<0.44	<0.05	0.26	0.275	0.049	<10	<10	<10	<10	<10	<10	<1.0	<8.0	<2.0	<2.0	8.4	<2.0	<10			4312
ACM 1	6/30/03	DF	1																			<1.0	<8.0	<2.0	<2.0	8.7	<2.0	24			
DAPT-E3	6/30/03	DT	1	55660	8.0	20.6	6.4	4.2	48900	8	<0.44	<0.05	0.64	0.214	0.03	<10	<10	<10	<10	<10	<10	<1.0	<8.0	14	<2.0	6.6	<2.0	25			
DAPT-E3	6/30/03	DF	1																			<1.0	<8.0	9.5	<2.0	7.7	<2.0	30			
DAPT-W3	6/30/03	DT	1	56060	8.0	20.7	6.8	6.5	49000	8	<0.44	<0.05	0.36	0.153	0.031	<10	<10	<10	<10	<10	<10	<1.0	<8.0	14	<2.0	6.3	<2.0	17			
DAPT-W3	6/30/03	DF	1																			<1.0	<8.0	9.3	<2.0	6.1	<2.0	22			
DP-OCI	6/30/03	DT	1	56220	7.9	18.7	6.9	2.7	48900	8.1	0.57	<0.05	<0.2	0.122	0.031	<10	<10	<10	<10	<10	<10	<1.0	<8.0	4.1	<2.0	7	<2.0	<10			
DP-OCI	6/30/03	DF	1																			<1.0	<8.0	3.2	<2.0	7.6	<2.0	15			
USB 1	2/25/03	ST	1					74	494	7.7	7	0.133	1.8	2.48	0.663	90	13	35	<10			<1.0	<8.0	12	3.7	8.6	<2.0	60			112
USB 1	2/25/03	SF	1																			<1.0	<8.0	9.5	<2.0	7.8	<2.0	39			
USB 1	3/4/03	ST	1	576	7.9	12.7	8.4	41	1880	7.2	5.7	0.427	2.1	0.918	0.142	64	12	<10	<10			<1.0	<8.0	9.9	<2.0	13	<2.0	29			340
USB 1	3/4/03	SF	1																			<1.0	<8.0	17	2.2	12	<2.0	60			
USB 4	2/25/03	DT	1					514	143	7.5	6.6	0.254	1.9	1.41	0.149	610	60	<10	<10			1.5	24	81	68	34	<2.0	160			120
USB 4	2/25/03	DF	1																			<1.0	<8.0	8.1	<2.0	6.4	<2.0	12			
USB 5	2/11/03	DT	1					57	438	7.7	3	0.555	1.5	1.47	0.352	33	<10	199	<10			3.4	<8.0	16	3.3	22	<2.0	77	2	<2.0	116
USB 5	2/11/03	DF	1																			1.5	<8.0	8	<2.0	19	<2.0	42	<2.0	<2.0	
USB 5	3/4/03	DT	1	3500	7.9	16.8	8.2	14	3440	6.9	13	1.01	4	0.49	0.023	16	<10	<10	<10			35	<8.0	7.9	<2.0	260	<2.0	210			1300
USB 5	3/4/03	DF	1																			11	<8.0	<2.0	<2.0	260	<2.0	150			
UB 1	12/20/02	ST	1					88	2020	8	7	0.122	1.4	1.65	0.293	80	<10	59	<10			<1.0	16	23	2.3	12	<2.0	67	3.5	5.6	650
UB 1	12/20/02	SF	1															54	<10			<1.0	<8.0	14	<2.0	4.2	<2.0	26	2.5	4.6	
UB 1	2/11/03	DT	1					90	1710	7.8	7.5	0.448	3.4	1.71	0.349	76	28	<10	<10			<1.0	9.2	98	14	13	<2.0	250	<2.0	2	414
UB 1	2/11/03	DF	1																			<1.0	<8.0	39	<2.0	6.5	<2.0	94	<2.0	<2.0	
UB 1	3/4/03	DT	1	6540	8	16.3	9.4	0.4	7020	8.1	20	<0.05	0.4	0.949	0.295	<10	<10	<10	<10			<1.0	<8.0	<2.0	<2.0	4.3	<2.0	<10			2630
UB 1	3/4/03	DF	1																			<1.0	<8.0	<2.0	<2.0	6.8	<2.0	<10			
UB 2	2/11/03	DT	1					131	97	7.7	2.4	0.461	2.1	1.71	0.374	270	62	<10	<10			1	18	92	44	15	<2.0	360	4.5	<2.0	30
UB 2	2/11/03	DF	1																			<1.0	<8.0	31	2.1	<4.0	<2.0	42	<2.0	<2.0	
UB 2	3/4/03	DT	1	1650	8.2	16.5	9.5	2.6	3690	8.2	5.3	0.151	0.95	0.612	0.197	<10	<10	<10	<10			<1.0	<8.0	5	<2.0	<4.0	<2.0	17			640
UB 2	3/4/03	DF	1																			<1.0	<8.0	3.6	<2.0	<4.0	<2.0	15			
UB 3	12/20/02	ST	1					95	476	8	2.2	0.25	1.1	3.37	0.311	79	11	<10	<10			<1.0	10	8.9	2.4	6.2	<2.0	27	3.5	<2.0	120
UB 3	12/20/02	SF	1																			<1.0	<8.0	4.4	<2.0	<4.0	<2.0	<10	2.5	<2.0	
UB 3	2/11/03	DT	1					79	755	8	4.8	0.462	2.8	1.74	0.361	74	16	31	<10			<1.0	12	37	12	11	<2.0	150	3.4	<2.0	164

Table C-11.15
Water Chemistry at Ambient Coastal Monitoring Stations

Site	Date	Samples Type #	Field Measurements				Turbidity NTU	Specific Conductance µS	pH	Nitrate as NO ₃ mg/L	Ammonia as N mg/L	TKN mg/L	Tot Phosphate as PO ₄ mg/L	ortho phosphate as P mg/L	TSS mg/L	VSS mg/L	Diazinon ng/L	Chlorpyrifos ng/L	Dimethoate ng/L	Malathion ng/L	Heavy Metals										Hardness as CaCO ₃ mg/L																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
			EC µS	pH	TEMP C	DO mg/L															Cd	Cr	Cu	Pb	Ni	Ag	Zn	As	Se																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
LB 3	2/11/03	DF	1																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											</

Water Chemistry at Mass Loading Stations in the San Diego Region

										Turbidity	Specific Conductance	pH	Nitrate as NO ₃	Ammonia as N	TKN	Tot Phosphate as PO ₄	ortho phosphate as P	TSS	VSS	Diazinon	Chlorpyrifos	Dimethoate	Malathion											Hardness as CaCO ₃		
Site	Composite Time		Samples		SC	pH	T	DO	Cd															Cr	Cu	Pb	Ni	Ag	Zn	As	Se					
	Begin	End	Type	#																												μS	°C		mg/L	μg/L
Aliso Creek in Aliso/Wood Canyon Park																																				
ACJ01	7/30/02 13:30	7/31 12:30	D	24					2	3140	8.2	4.8	<0.05	1	0.949	0.277	<10	<10																		
	12/16/02 16:47	12/16 17:47	ST																<10	<10			26	36	64	11	79	<2.0	260	9.6	4.8			330		
	12/16/02 16:47	12/16 17:47	SF																<10	<10			<1.0	<8.0	2.7	<2.0	15	<2.0	<10	<2.0	2.2					
	12/16/02 19:47	12/17 8:47	ST																<10	<10			7.7	34	44	14	42	<2.0	190	11	3.2			300		
	12/16/02 19:47	12/17 8:47	SF																<10	<10			<1.0	<8.0	3.4	<2.0	8.7	<2.0	<10	2.4	<2.0					
	12/17/02 11:16	12/18 5:16	ST						38	1740	8	7	0.185	1.9	0.949	0.318	52	<10	112	<10			1.7	<8.0	10	<2.0	23	<2.0	28	4.1	5.2			580		
	12/17/02 11:16	12/18 5:16	SF																<10	<10			<1.0	<8.0	5.1	<2.0	17	<2.0	<10	3.1	4.9					
	12/19/02 9:45	12/19 19:45	ST	6						2350	8.2					0.234			<10	<10			1.7	<8.0	6.7	<2.0	31	<2.0	18	4.4	7.3			782		
	12/19/02 9:45	12/19 19:45	SF	6															<10	<10			<1.0	<8.0	5.8	<2.0	31	<2.0	12	4.1	7.4					
	12/19/02 21:45	12/21 7:45	ST	18	1806	8.2	12.2	11.9	105	1330	7.9	5.7	0.181	1.8	2.02	0.33	270	28	145	<10			2.7	12	16	4.8	26	<2.0	60	5.7	4.3			411		
	12/19/02 21:45	12/21 7:45	SF	18															<10	<10			<1.0	<8.0	4.7	<2.0	15	<2.0	<10	3	3.6					
	2/25/03 5:12	2/26 9:12	ST	15	502	7.8	12.5	11.6	149	918	7.6	3.6	0.141	1.9	1.87	0.268	290	32	<10	<10			3.9	12	21	5.5	29	<2.0	80					270		
	2/25/03 5:12	2/26 9:12	SF	15															<10	<10			<1.0	<8.0	5.3	<2.0	15	<2.0	12							
	2/26/03 12:12	2/28 9:12	ST	28	1520	7.6	13.3	9.5											<10	<10			2.7	<8.0	10	2.8	24	<2.0	49					352		
	2/26/03 12:12	2/28 9:12	SF	28															<10	<10			<1.0	<8.0	3.4	<2.0	19	<2.0	15							
	3/15/03 9:47	3/15 10:47	ST	6	750	7.8	14.9	10.3											346	<10			3.9	<8.0	4.5	<2.0	54	<2.0	16							
	3/15/03 9:47	3/15 10:47	SF	6															<10	<10	<10	<10	6.2	49	47	22	45	<2.0	200							
	3/15/03 12:47	3/16 10:47	ST	12					750	537	7.7	3.7	0.138	3.7	3.98	0.267	1420	150	149	<10			<1.0	<8.0	12	<2.0	6.9	<2.0	<10							
	3/15/03 12:47	3/15 10:47	SF	12															<10	<10			<1.0	<8.0	12	<2.0	6.9	<2.0	<10							
	3/16/03 12:47	3/18 8:47	ST	23	2070	7.8	14.1	10	73	1520	7.9	6.2	0.106	2.1	1.25	0.269	100	13	<10	<10			3.6	<8.0	12	2.1	34	<2.0	33					510		
	3/16/03 12:47	3/18 8:47	SF	23															<10	<10			1.8	<8.0	6.8	<2.0	29	<2.0	<10							
	3/18/03 10:47	3/19 8:47	ST	12					16	2230	8.1	6.6	0.107	1.2	0.796	0.213	12	<10	<10	<10			5.3	<8.0	11	<2.0	42	<2.0	20					750		
	3/18/03 10:47	3/19 8:47	SF	12															<10	<10	<10	<10	3.2	<8.0	7.4	<2.0	41	<2.0	13							
	4/14/03 5:02	4/14 6:02	ST	6	1084	8.1	17.1												<10	<10	<10	<10														
	4/14/03 8:02	4/15 8:02	ST	13					132	814	8	3	0.17	1.8	1.65	0.224	240	38	135	<10	<10	<10	<10	<1.0	<8.0	5.7	<2.0	12	<2.0	<10				380		
	4/14/03 8:02	4/15 8:02	SF	13															<10	<10			<1.0	<8.0	5.7	<2.0	12	<2.0	<10							
	4/15/03 10:02	4/17 6:02	ST	21	1832	8.2	16.2	8.3	15	1570	8	4.8	0.178	1	0.979	0.269	19	<10	<10	<10	<10	<10	2.5	<8.0	11	<2.0	27	<2.0	19					510		
	4/15/03 10:02	4/17 6:02	SF	21															<10	<10			1.9	<8.0	12	<2.0	27	<2.0	13							
	4/17/03 8:02	4/18 8:02	ST	13	2130	7.0	8.3	800	4.7	2240	8.1	4.8	0.112	0.84	0.857	0.232	<10	<10	<10	<10	<10	<10	3.3	<8.0	5.6	<2.0	36	<2.0	16					800		
	4/17/03 8:02	4/18 8:02	SF	13															<10	<10			1.8	<8.0	4.5	<2.0	37	<2.0	12							
	5/3/03 1:02	5/3 2:02	ST	6	1372	8	17.9	11.2	14	3210	8.2	5.7	0.147	1.2	0.796		25	<10	85.9	<10	<10	<10	6.6	<8.0	11	<2.0	54	<2.0	26					960		
	5/3/03 1:02	5/3 2:02	SF	6															<10	<10			5.2	<8.0	7.5	<2.0	49	<2.0	28							
	5/3/03 4:02	5/4 8:14	ST	16					31	1040	7.9	3.6	0.139	1.2	0.826	0.192	45	<10	242	<10	<10	<10	2.3	<8.0	13	<2.0	19	<2.0	30					320		
	5/3/03 4:02	5/4 8:14	SF	16															<10	<10			1.2	<8.0	7.9	<2.0	16	<2.0	20							
	5/4/03 10:14	5/5 14:14	ST	15	2430	7.7	18.8	7.1	3.3	1840	8.1	4.2	<0.05	0.83	0.826	0.235	<10	<10	<10	<10	<10	<10	2.5	<8.0	6.1	<2.0	24	<2.0	15					560		
	5/4/03 10:14	5/5 14:14	SF	15															<10	<10			1.9	<8.0	5.4	<2.0	24	<2.0	13							
	5/5/03 16:14	5/7 2:14	ST	18	2740	7.8	18.9	7.7	4.6	2480	8.1	4.4	0.128	0.87	0.765	0.221	<10	<10	<10	<10	<10	<10	3.9	<8.0	8.6	<2.0	33	<2.0	20					826		
	5/5/03 16:14	5/7 2:14	SF	18															<10	<10			2.5	<8.0	5.5	<2.0	35	<2.0	16							

Water Chemistry at Mass Loading Stations in the San Diego Region

									Turbidity	Specific Conductance	pH	Nitrate as NO ₃	Ammonia as N	TKN	Tot Phosphate as PO ₄	ortho phosphate as P	TSS	VSS	Diazinon	Chlorpyrifos	Dimethoate	Malathion										Hardness as CaCO ₃																																
Site	Composite Time		Samples		SC	pH	T	DO																Cd	Cr	Cu	Pb	Ni	Ag	Zn	As	Se																																
	Begin	End	Type	#	μS		°C	mg/L	NTU	μS		mg/L						ng/L						μg/L									mg/L																															
Laguna Canyon Wash at Woodland																																																																
LCWI02	12/16/02 13:40	12/17 0:24	ST																	<10	<10			<1.0	21	45	25	20	<2.0	170			140																															
	12/16/02 13:40	12/17 0:24	SF																				<1.0	<8.0	4.1	<2.0	<4.0	<2.0	16																																			
	12/17/02 1:24	12/17 9:24	ST							529	8.1	4	<0.05	3.7	1.38	0.349				<10	<10			<1.0	<8.0	8.2	<2.0	<4.0	<2.0	19			120																															
	12/17/02 1:24	12/17 9:24	SF																				<1.0	<8.0	5.6	<2.0	<4.0	<2.0	<10																																			
	12/19/02 10:45	12/20 2:45	ST	9	1375	8.3	10.3	11.5		1260	8.2	1.5	0.051	0.7	0.581	0.141				<10	<10			<1.0	<8.0	8.2	<2.0	<4.0	<2.0	17	3	2.6	381																															
	12/19/02 10:45	12/20 2:45	SF	9																			<1.0	<8.0	4.3	<2.0	<4.0	<2.0	<10	<2.0	<2.0																																	
	12/20/02 4:45	12/21 8:45	ST	15	1309	7.7	11.3	4.8	41	792	8.2	2.7	<0.05	0.6	1.44	0.266	260	16	106	<10			<1.0	9.2	13	6.3	9.5	<2.0	37	3.7	<2.0	226																																
	12/20/02 4:45	12/21 8:45	SF	15																			1.7	17	20	7.3	19	<2.0	74	5.6	<2.0																																	
	2/25/03 0:46	2/25 1:46	ST	6	486	8	12.4	11.6												<10	<10			<1.0	16	16	9.1	15	<2.0	55			150																															
	2/25/03 3:46	2/26 9:46	ST	16					138	515	7.9	2	<0.05	1.4	1.77	0.249	255	24	247	<10			<1.0	<8.0	5.6	<2.0	<4.0	<2.0	<10			160																																
	2/25/03 3:46	2/26 9:46	SF	16																			<1.0	<8.0	16	<2.0	6.9	<2.0	20			414																																
	2/28/03 11:46	3/1 7:46	ST	11	1085	7.9	12.1	12.1	24	1140	8.3	5.3	<0.05	0.65	0.52	0.107	29	<10	<10	<10			<1.0	<8.0	16	<2.0	6.9	<2.0	20																																			
	2/28/03 11:46	3/1 7:46	SF	11																			<1.0	<8.0	4.9	<2.0	4.9	<2.0	<10																																			
	3/15/03 8:22	3/15 9:22	ST	6	450	7.9	15.1	10.0												<10	<10			<1.0	<8.0	19	<2.0	5.1	<2.0	17																																		
	3/15/03 8:22	3/15 9:22	SF	6																			<1.0	<8.0	19	<2.0	5.1	<2.0	17																																			
	3/15/03 11:22	3/15 21:22	ST	6																<10	<10			<1.0	<8.0	11	<2.0	5.4	<2.0	22			298																															
	3/16/03 14:58	3/17 15:58	ST	11	1490	8.3	13.8	11.6	27	1010	8.3	3.2	<0.05	1.1	0.826	0.22	19	<10	<10	<10			<1.0	<8.0	7.6	<2.0	<4.0	<2.0	<10																																			
	3/16/03 14:58	3/17 15:58	SF	11																			<1.0	<8.0	6.7	<2.0	<4.0	<2.0	<10																																			
	3/17/03 17:58	3/19 7:58	ST	20					9.3	1460	8.4	2.6	<0.05	0.64	0.551	0.181	<10	<10	<10	<10			<1.0	<8.0	6.1	<2.0	<4.0	<2.0	<10			432																																
	3/17/03 17:58	3/19 7:58	SF	20																			<1.0	<8.0	6.1	<2.0	<4.0	<2.0	<10																																			
	4/14/03 8:19	4/14 9:19	ST	6	669	8.1	14.2									0.165				<10	<10	<10	<10	5.2	180	120	35	120	<2.0	380			80																															
	4/14/03 8:19	4/14 9:19	SF	6																			<1.0	<8.0	6.7	<2.0	4.3	<2.0	19																																			
	4/14/03 11:19	4/15 9:19	ST	12					90	525	8	1.8	<0.05	1.2	1.41	0.211	190	22	100	<10	<10	<10	<1.0	12	12	3.6	8.5	<2.0	29			168																																
	4/14/03 11:19	4/15 9:19	SF	12																			<1.0	<8.0	5.5	<2.0	<4.0	<2.0	13																																			
	4/15/03 11:19	4/16 3:19	ST	9	1312	8.1	13.9	10.5	3.9	1040	8.4	1.4	<0.05	0.59	0.734	0.201	<10	<10	<10	<10	<10	<10	<1.0	<8.0	5.6	<2.0	<4.0	<2.0	<10			310																																
	4/15/03 11:19	4/16 3:19	SF	9																			<1.0	<8.0	4.7	<2.0	<4.0	<2.0	<10																																			
4/16/03 5:19	4/18 9:19	ST	27	1491	8.4	14.8	15.1	1.2	1480	8.4	1.3	<0.05	0.58	0.52	0.174	<10	<10	<10	<10	<10	<10	<1.0	<8.0	4.2	<2.0	<4.0	<2.0	12			470																																	
4/16/03 5:19	4/18 9:19	SF	27																			<1.0	<8.0	4.4	<2.0	<4.0	<2.0	10																																				
5/3/03 4:56	5/3 5:56	ST	6	1112	8.7	16.7	19.9	39	1780	8.3						90	20	<10	<10	<10	<10	<1.0	<8.0	12	4.5	7.2	<2.0	43			520																																	
5/3/03 4:56	5/3 5:56	SF	6																			<1.0	<8.0	5.6	<2.0	4.4	<2.0	<10																																				
5/3/03 7:56	5/4 7:56	ST	13					19	734	8.3	1.1	<0.05	0.81	0.734	0.204	18	<10	<10	<10	<10	<10	<1.0	<8.0	12	<2.0	<4.0	<2.0	15			210																																	
5/3/03 7:56	5/4 7:56	SF	13																			<1.0	<8.0	6.9	<2.0	<4.0	<2.0	<10																																				
5/4/03 9:56	5/5 1:56	ST	9	1348	8.4	15.5	13.5	0.7	1310	8.6	<0.44	<0.05	0.51	0.49	0.14	<10	<10	<10	<10	<10	<10	<1.0	<8.0	7.7	<2.0	<4.0	<2.0	<10			384																																	
5/4/03 9:56	5/5 1:56	SF	9																			<1.0	<8.0	7.9	<2.0	<4.0	<2.0	<10																																				
5/5/03 3:56	5/7 7:56	ST	27	1590	8.5	15.4	13.8	3.1	1530	8.5	0.57	<0.05	0.47	0.428	0.142	<10	<10	<10	<10	<10	<10	<1.0	<8.0	6.1	<2.0	<4.0	<2.0	47			450																																	
5/5/03 3:56	5/7 7:56	SF	27																			<1.0	<8.0	6.2	<2.0	<4.0	<2.0	<10																																				

Water Chemistry at Mass Loading Stations in the San Diego Region

									Turbidity	Specific Conductance	pH	Nitrate as NO ₃	Ammonia as N	TKN	Tot Phosphate as PO ₄	ortho phosphate as P	TSS	VSS	Diazinon	Chlorpyrifos	Dimethoate	Malathion											Hardness as CaCO ₃	
Composite Time		Samples		SC	pH	T	DO	Cd															Cr	Cu	Pb	Ni	Ag	Zn	As	Se				
Site	Begin	End	Type																												#	μS		°C
Prima Deshecha Channel at Calle Vista Grande																																		
PDCM01	7/30/02 12:19	7/31 11:19	D	24					122	6840	8.1	14	<0.05	2.4	2.42	0.416	290	36																
	12/16/02 15:19	12/16 16:19	ST						294	614	7.6	6.2	0.45	4.5	3.37	0.123	1010	130	<10	<10			12	39	90	24	68	<2.0	470					350
	12/16/02 15:19	12/16 16:19	SF																				<1.0	<8.0	3.5	<2.0	12	<2.0	15					
	12/16/02 18:19	12/17 10:00	ST						43	3110	7.8	20	1.44	7.8	1.56	0.297	110	12	<10	<10			6	<8.0	12	<2.0	49	<2.0	64					1010
	12/16/02 18:19	12/17 10:00	SF																				4.9	<8.0	8.2	<2.0	43	<2.0	34					
	12/17/02 12:19	12/18 20:19	ST						24	5390	7.9	19	0.851	2.8	1.47	0.125	41	<10	118	<10			13	<8.0	15	<2.0	99	<2.0	68	4.2	22	1720		
	12/17/02 12:19	12/18 20:19	SF																				11	<8.0	11	<2.0	96	<2.0	46	3.8	22			
	12/19/02 9:55	12/20 1:55	ST	9	7110	7.9	11.2	11.6												31.2	<10			20	<8.0	16	<2.0	130	<2.0	88	5.5	29	2328	
	12/19/02 9:55	12/20 1:55	SF	9																			17	<8.0	12	<2.0	130	<2.0	44	4.5	26			
	12/20/02 3:55	12/21 7:55	ST	15	1770	7.7	12.7	3.3	43	2610	7.8	12	1.25	2.7	0.979	0.19	100	16	97.7	<10			6	<8.0	14	<2.0	56	<2.0	57	2.8	9.7	819		
	12/20/02 3:55	12/21 7:55	SF	15																			5.4	<8.0	8.8	<2.0	54	<2.0	33	2.3	9.8			
	3/15/03 12:33	3/16 4:33	ST	9	2128	7.5	14.7	9.7	1140	1100	7.1	6.2	0.807	5.4	3.67	0.142	2410	230	96.7	<10			8.6	120	77	15	100	<2.0	320					
	3/15/03 12:33	3/16 4:33	SF	9																			1.2	<8.0	5.7	<2.0	23	<2.0	<10					
	3/16/03 6:33	3/17 18:33	ST	18		7.8	14.7	4.8	62	4350	7	14	0.408	4.5	1.29	0.047	160	18	<10	<10			21	8.6	16	<2.0	180	<2.0	130					1454
	3/16/03 6:33	3/17 18:33	SF	18																			19	<8.0	8.6	<2.0	180	<2.0	80					
	3/17/03 21:57	3/19 9:57	ST	19					38	5380	7.7	12	0.423	2.8	0.796	0.051	60	14	<10	<10			27	<8.0	11	<2.0	200	<2.0	140					1750
	3/17/03 21:57	3/19 9:57	SF	19																			25	<8.0	8.6	<2.0	200	<2.0	88					
	4/14/03 1:54	4/14 2:54	ST	6	2790	7.7	15.0	0.48												408	<10	<10	<10	30	52	160	28	170	<2.0	700				348
	4/14/03 1:54	4/14 2:54	SF	6																			1.8	<8.0	13	<2.0	34	<2.0	31					
	4/14/03 4:54	4/15 8:54	ST	15					51	1940	7.8	7	0.349	1.7	1.07	0.226	115	20	130	<10	<10	<10	4.9	<8.0	14	<2.0	49	<2.0	58					620
	4/14/03 4:54	4/15 8:54	SF	15																			3.2	<8.0	7.9	<2.0	38	<2.0	26					
	4/15/03 10:49	4/16 20:49	ST	18	2610	7.6	14.6	10.4	22	5260	7.8	13	0.449	2.3	0.643	0.083	36	<10	<10	<10	<10	<10	16	<8.0	11	<2.0	160	<2.0	92					1720
	4/15/03 10:49	4/16 20:49	SF	18																			14	<8.0	9	<2.0	140	<2.0	66					
	4/17/03 10:49	4/18 2:49	ST	9	4925	7.4	15.6	8.4	13	4550	7.7	10	0.98	2.6	0.428	0.049	23	<10	<10	<10	<10	<10	14	<8.0	12	<2.0	130	<2.0	93					1360
4/17/03 10:49	4/18 2:49	SF	9																			13	<8.0	8.9	<2.0	130	<2.0	75						
4/18/03 4:49	4/18 8:49	ST	3																			<10	<10	<10	<10									
5/3/03 1:32	5/3 2:32	ST	6	6800	7.8	16.4	11.1	130	1150	7.3							420	74	764	<10	<10	98.5	7.6	10	34	5.5	47	<2.0	180					340
5/3/03 1:32	5/4 2:32	SF	6																			1.8	<8.0	12	<2.0	22	<2.0	38						
5/3/03 4:32	5/4 8:32	ST	14	6800	7.8	16.4	11.1	27	5080	8	12	0.084	1.3	0.643	0.151	49	<10	124	<10	<10	<10	16	<8.0	12	<2.0	130	<2.0	75					1500	
5/3/03 4:32	5/4 8:32	SF	14																			15	<8.0	8.2	<2.0	130	<2.0	50						
5/4/03 10:32	5/7 2:32	ST	31	7676	8.0	16.0	21.3	7.8	9260	8.1	19	<0.05	1.4	0.428	0.112	<10	<10	810	<10	<10	<10	33	<8.0	10	<2.0	220	<2.0	100					3212	
5/4/03 10:32	5/7 2:32	SF	31																			36	<8.0	14	<2.0	250	<2.0	94						

Water Chemistry at Mass Loading Stations in the San Diego Region

									Turbidity	Specific Conductance	pH	Nitrate as NO ₃	Ammonia as N	TKN	Tot Phosphate as PO ₄	ortho phosphate as P	TSS	VSS	Diazinon	Chlorpyrifos	Dimethoate	Malathion											Hardness as CaCO ₃
Composite Time			Samples		SC	pH	T	DO															Cd	Cr	Cu	Pb	Ni	Ag	Zn	As	Se		
Site	Begin	End	Type	#																												μS	
Segunda Deshecha Channel at Pico																																	
SDCM02	7/30/02 11:07	7/31 10:07	D	24					107	5520	8.4	0.7	0.125	4.2	4.28	0.275	430	62															
	10/10/02 10:07		DT	1					56	2980	8.2	12	0.245	1.7	0.459	<0.01	83	17															
	10/10/02 10:07		DF	1																													
	12/16/02 12:27	12/16 22:58	ST						584	3600	8.8	4.3	0.185	3.8	4.28	0.247	1610	140	<10	<10												990	
	12/16/02 12:27	12/16 22:58	SF																														
	12/16/02 23:58	12/17 9:58	ST						1980	2300	7.9	13	0.15	5.3	1.44	0.566	3360	240	<10	<10													690
	12/16/02 23:58	12/17 9:58	SF																														
	12/17/02 10:55	12/18 14:55	ST						326	3540	8.2	11	<0.05	3.6	0.704	0.323	700	67	111	21													1070
	12/17/02 10:55	12/18 14:55	SF																														
	12/19/02 9:30	12/19 19:30	ST	6	2780	7.8	8.5	13.9		5410	8.4	12	0.051	1.4	0.857	0.2			<10	<10													1641
	12/19/02 9:30	12/19 19:30	SF	6																													
	12/19/02 21:30	12/21 7:30	ST	6	565	8.1	11.2	4.0	632	2400	8.1	8.4	0.106	2.7	4.28	0.38	1070	100	76.7	<10													668
	12/19/02 21:30	12/21 7:30	SF	6																													
	3/15/03 9:05	3/15 10:05	ST	6	1690	7.8	14.7	9.9												<10	<10												
	3/15/03 9:05	3/15 10:05	SF	6																													
	3/15/03 12:05	3/16 8:05	ST	11						2130	828	7.6	4.8	0.134	6.5	9.49	0.313	4450	380	<10	<10												
	3/15/03 12:05	3/16 8:05	SF	11																													
	3/18/03 9:05	3/19 11:05	ST	14						125	4240	8.3	11	<0.05	1.5	1.53	0.208	200	22	<10	<10												1370
	3/18/03 9:05	3/19 11:05	SF	14																													
	4/14/03 4:45	4/15 8:45	ST	15	1830	8.1	14.4	3.0	319	1540	7.9	5.3	0.215	2.6	2.78	0.315	630	72	<10	<10	<10	<10											440
	4/14/03 4:45	4/15 8:45	SF	15																													
	4/15/03 10:45	4/17 8:45	ST	24	1554	7.9	13.8	10.9	20	4210	8.3	10	<0.05	1.6	0.979	0.26	25	<10	<10	<10	<10	<10											1250
	4/15/03 10:45	4/17 8:45	SF	24																													
	4/17/03 10:45	4/18 8:45	ST	12	2910	7.8	14.7	9.8	17	3240	7.9	6.2	<0.05	0.95	0.551	0.14	22	<10	<10	<10	<10	<10											360
	4/17/03 10:45	4/18 8:45	SF	12																													
	5/3/03 3:01	5/3 4:01	ST	6	2565	8.7	16.3	14.3		1500	7.9	3	0.397	7.4	3.06	0.135			540	<10	<10	<10											420
	5/3/03 3:01	5/4 4:01	SF	6																													
	5/3/03 6:01	5/4 8:01	ST	14	2565	8.8	16.3	14.3	60	1860	7.9	4.4	0.051	1.3	0.826	0.153	100	13	418	<10	<10	<10											480
5/3/03 6:01	5/4 8:01	SF	14																														
5/4/03 10:01	5/7 2:01	ST	31	4539	8.4	16.2	25.1	1.5	5120	8.6	3.8	<0.05	1.2	0.306	0.089	<10	<10	<10	<10	<10	<10												
5/4/03 10:01	5/7 2:01	SF	31																														

Water Chemistry at Mass Loading Stations in the San Diego Region

									Turbidity	Specific Conductance	pH	Nitrate as NO ₃	Ammonia as N	TKN	Tot Phosphate as PO ₄	ortho phosphate as P	TSS	VSS	Diazinon	Chlorpyrifos	Dimethoate	Malathion											Hardness as CaCO ₃																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
Composite Time		Samples		SC	pH	T	DO	Cd															Cr	Cu	Pb	Ni	Ag	Zn	As	Se																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
Site	Begin	End	Type																												#	μS		°C	mg/L	mg/L	ng/L	μg/L	mg/L																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
San Juan Creek at La Novia																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
SJNL01	12/16/02 17:32	12/16 18:32	ST																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												</

Water Chemistry at Mass Loading Stations in the San Diego Region

									Turbidity	Specific Conductance	pH	Nitrate as NO ₃	Ammonia as N	TKN	Tot Phosphate as PO ₄	ortho phosphate as P	TSS	VSS	Diazinon	Chlorpyrifos	Dimethoate	Malathion											Hardness as CaCO ₃
Composite Time		Samples		SC	pH	T	DO	Cd															Cr	Cu	Pb	Ni	Ag	Zn	As	Se			
Site	Begin	End	Type																												#	μS	
Trabuco Creek at Del Obispo																																	
COL02	12/17/02 10:01	12/19 8:01	ST						51	1280	8.1	5.7	0.08	1.2	1.22	0.128	160	12	112	<10		<1.0	<8.0	13	2.2	9.5	<2.0	32	4.8	4.5	450		
	12/17/02 10:01	12/19 8:01	SF																			<1.0	<8.0	5.4	<2.0	4.2	<2.0	<10	3	3.4			
	12/19/02 10:01	12/20 2:01	ST	9	959	8.9	11.4	13.5		1270	8.2	4.8	0.107	0.9	0.612	0.13			108	<10		<1.0	<8.0	6.5	<2.0	5.7	<2.0	15	3.9	3.8	434		
	12/19/02 10:01	12/20 2:01	SF	9																		<1.0	<8.0	5	<2.0	4.9	<2.0	<10	3.3	4			
	12/20/02 4:01	12/21 8:01	ST	15						598	8.1	4.4	0.144	2.7	4.59	0.193			78	<10		2.1	25	30	9.2	19	<2.0	95	8.6	3			
	12/20/02 4:01	12/21 8:01	SF	15																		<1.0	<8.0	5.1	<2.0	<4.0	<2.0	<10	2.5	2.2			
	2/24/03 23:56	2/25 0:56	ST	6	437	8.07	12.6	10.9											<10	<10		2.9	38	58	17	39	<2.0	190			750		
	2/24/03 23:56	2/25 0:56	SF	6																		<1.0	<8.0	4.3	<2.0	11	<2.0	12					
	2/25/03 2:56	2/26 8:56	ST	16					796	610	7.8	3.8	0.155	3.6	4.9	0.208	2080	156	<10	152		4.8	70	120	33	66	<2.0	330			230		
	2/25/03 2:56	2/26 8:56	SF	16																		<1.0	<8.0	5.2	<2.0	<4.0	<2.0	<10					
	2/26/03 10:56	2/28 8:56	ST	33	925	8.1	13.3	11.44											75	<10		1.6	17	64	12	24	<2.0	100			252		
	2/26/03 10:56	2/28 8:56	SF	33																		<1.0	<8.0	4.5	<2.0	5.7	<2.0	<10					
	2/28/03 10:56	3/1 8:56	ST	12	710	8.3	11.5	8.9	2.3	1380	8.4	0.84	<0.05	0.64	0.52	0.164	<10	<10	<10	<10		<1.0	<8.0	4.4	<2.0	<4.0	<2.0	<10			380		
	2/28/03 10:56	3/1 8:56	SF	12																		<1.0	<8.0	4.8	<2.0	<4.0	<2.0	<10					
	3/15/03 9:23	3/15 10:23	ST	6	530	7.9	14.4	10.4											<10	<10													
	3/15/03 9:23	3/15 10:23	SF	6																		<1.0	<8.0	12	<2.0	<4.0	<2.0	27					
	3/15/03 12:23	3/15 14:23	SF	2															<10	<10													
	3/16/03 10:26	3/17 2:26	ST	9	918	8.1	14.3	6.5	796	641	7.9	5.7	0.076	3.7	3.98	0.131	1630	140	<10	<10		2.9	59	64	20	45	<2.0	210			222		
	3/16/03 10:26	3/17 2:26	SF	9																		<1.0	<8.0	6.3	<2.0	<4.0	<2.0	<10					
	3/17/03 4:26	3/18 8:26	ST	15					181	894	8.1	5.7	0.412	1.1	0.887	0.095	270	24	<10	<10		<1.0	12	16	3.9	9.1	<2.0	40			324		
	3/17/03 4:26	3/18 8:26	SF	15																		<1.0	<8.0	4.5	<2.0	<4.0	<2.0	<10					
	3/18/03 10:26	3/19 10:26	ST	13					35	1030	8.3	5.7	<0.05	0.55	0.367	0.078	30	<10	<10	<10		<1.0	<8.0	9.8	<2.0	<4.0	<2.0	13			414		
	3/18/03 10:26	3/19 10:26	SF	13																		<1.0	<8.0	4.1	<2.0	<4.0	<2.0	<10					
	4/15/03 11:52	4/17 9:52	ST	24	1331	8.1	15.2	10.1	60	1100	8.3	4	0.058	0.71	0.765	0.144	135	<10	<10	<10	<10	<10	<1.0	<8.0	9.5	<2.0	8.9	<2.0	27			350	
	4/15/03 11:52	4/17 9:52	SF	24																		<1.0	<8.0	4.1	<2.0	4.9	<2.0	<10					
	4/17/03 11:52	4/18 9:52	ST	12	1375	7.7	17.4	8.4	9.7	1490	8.3	3.7	<0.05	0.42	0.398	0.116	13	<10	<10	<10	<10	<10	<1.0	<8.0	5.4	<2.0	7.3	<2.0	<10			540	
	4/17/03 11:52	4/18 9:52	SF	12																		<1.0	<8.0	3.9	<2.0	5.9	<2.0	<10					
	5/3/03 3:21	5/3 4:21	ST	6	770	8.3	16.2	12.8	5160	846	7.9					0.106	14300	880	<10	<10	<10	<10	11	150	200	58	130	<2.0	630			280	
	5/3/03 3:21	5/3 4:21	SF	6																		<1.0	<8.0	3.1	<2.0	4.7	<2.0	<10					
	5/3/03 6:21	5/3 16:21	ST	6					3260	830	7.9						9430	580	<10	<10	<10	<10	10	150	190	57	130	<2.0	640			280	
	5/4/03 8:55	5/5 18:55	ST	18	1510	8.1	16.2	10.6	26	1150	8.3	2.4	<0.05	0.5	0.398	0.087	38	<10	<10	<10	<10	<10	<1.0	<8.0	6.3	<2.0	4.9	<2.0	11			372	
	5/4/03 8:55	5/5 18:55	SF	18																		<1.0	<8.0	3.6	<2.0	<4.0	<2.0	<10					
	5/5/03 20:55	5/7 6:55	ST	18	1710	8.1	16.0	10.8	7.4	1540	8.3	1.8	<0.05	0.49	0.337	0.094	<10	<10	<10	<10	<10	<10	<1.0	<8.0	5.4	<2.0	5.4	<2.0	<10			540	
	5/5/03 20:55	5/7 6:55	SF	18																		<1.0	<8.0	3.3	<2.0	4.7	<2.0	<10					

Comparison of Time-weighted Concentration to Chronic CTR Criteria

		Storm Sample Length	EMC ug/L					
Location	Storm Date Range	(Days)	Cd	Cr	Cu	Ni	Pb	Zn
Freshwater CTR Chronic Criterion								
ACJ01	Mar 15-19, 2003	4.0	1.7		8.2	26.7	<2.0	3.5
	Apr 14-18, 2003	4.0	1.4		8.4	26.0	<2.0	9.5
	May 03-07, 2003	4.1	1.9		6.2	25.8	<2.0	16.4
LCWI02	Apr 14-18, 2003	4.0	<1.0		4.8	0.0	<2.0	9.0
	May 03-07, 2003	4.1	<1.0		6.7	0.0	<2.0	<10.0
PDCM01	Mar 15-19, 2003	3.9	18.5 (6.3)		8.1	162.0	<2.0	69.7
	May 03-07, 2003	4.0	29.2 (6.3)		12.2	211 (168)	<2.0	79.8
SDCM02	Apr 14-18, 2003	4.2	2.4		9.9	49.1	<2.0	17.6
	May 03-07, 2003	4.0	2.5		8.3	42.6	<2.0	4.1
SJNL01	Dec 16-21, 2002	4.6	<1.0		4.7	<4.0	<2.0	1.6
	Feb 25-Mar 01, 2003	4.3	<1.0		6.3	5.6	<2.0	11.3
	Apr 14-18, 2003	4.0	<1.0		4.7	<4.0	<2.0	4.6
TCOL02	Dec 17-21, 2002	3.9	<1.0		5.2	3.0	<2.0	<10.0
	Feb 24-Mar 01, 2003	4.4	<1.0		4.8	2.7	<2.0	0.1

Saltwater CTR Chronic Criterion

ACJ01	Mar 15-19, 2003	4.0	1.7	<8.0	8.2 (3.1)	26.7 (8.2)	<2.0	3.5
	Apr 14-18, 2003	4.0	1.4	<8.0	8.4 (3.1)	26.0 (8.2)	<2.0	9.5
	May 03-07, 2003	4.1	1.9	<8.0	6.2 (3.1)	25.8 (8.2)	<2.0	16.4
LCWI02	Apr 14-18, 2003	4.0	<1.0	<8.0	4.8 (3.1)	0.0	<2.0	9.0
	May 03-07, 2003	4.1	<1.0	<8.0	6.7 (3.1)	0.0	<2.0	<10.0
PDCM01	Mar 15-19, 2003	3.9	18.5 (9.3)	<8.0	8.1 (3.1)	162 (8.2)	<2.0	69.7
	May 03-07, 2003	4.0	29.2 (9.3)	<8.0	12.2 (3.1)	211 (8.2)	<2.0	79.8
SDCM02	Apr 14-18, 2003	4.2	2.4	<8.0	9.9 (3.1)	49.1 (8.2)	<2.0	17.6
	May 03-07, 2003	4.0	2.5	<8.0	8.3 (3.1)	42.6 (8.2)	<2.0	4.1
SJNL01	Dec 16-21, 2002	4.6	<1.0	<8.0	4.7 (3.1)	<4.0	<2.0	1.6
	Feb 25-Mar 01, 2003	4.3	<1.0	<8.0	6.3 (3.1)	5.6	<2.0	11.3
	Apr 14-18, 2003	4.0	<1.0	<8.0	4.7 (3.1)	<4.0	<2.0	4.6
TCOL02	Dec 17-21, 2002	3.9	<1.0	<8.0	5.2 (3.1)	3.0	<2.0	<10.0
	Feb 24-Mar 01, 2003	4.4	<1.0	<8.0	4.8 (3.1)	2.7	<2.0	0.1

Values > ctr emboldened with ctr in parentheses