

Table D.1-1. Dry Weather Monitoring Results for Santa Margarita WMA, 2007-2008.

Analyte	Units	Water Quality Benchmarks	Source	Santa Margarita River	
				MLS	MLS
				3/6/08	5/8/08
General/Physical/Organic					
Electrical Conductivity ***	umhos/cm		2. CCR, 5. Goldbook	1280	1180
Oil & Grease	mg/L	10	1 Basin Plan, 3. Anacostia River TMDL	<5	<5
pH	pH scale	6.5-9.0	1. Basin Plan	8.02	8.21
Water Temperature	Celcius			12.72	18.61
Bacteriological					
Enterococci	MPN/100mL	151 (a)	1. Basin Plan	8	22
Fecal Coliform	MPN/100mL	400	1. Basin Plan REC-1/REC-2	17	50
Total Coliform	MPN/100mL	NA	1. Basin Plan	110	1600
Wet Chemistry					
Ammonia as N	mg/L	(b)	6. U.S. EPA Water Quality Criteria (Freshwater)	<0.02	<0.02
Biochemical Oxygen Demand	mg/L	10	8. McNeeley (1979)	<2.00	<2.00
Chemical Oxygen Demand	mg/L	120	4. MSGP 2000	<25	<25
Dissolved Organic Carbon	mg/L			4.83	3.71
Dissolved Phosphorus	mg/L	(c)	19. U.S. EPA Nutrient Numeric Endpoint Tool	<0.05	<0.05
Nitrate as N	mg/L	(c)	19. U.S. EPA Nutrient Numeric Endpoint Tool	1.82	0.26
Nitrite as N	mg/L	(c)	19. U.S. EPA Nutrient Numeric Endpoint Tool	<0.007	<0.007
Methylene Blue Active Substances	mg/L	0.5	1. Basin Plan	<0.1	<0.1
Total Dissolved Solids	mg/L	750 (d)	1. Basin Plan	830	819
Total Kjeldahl Nitrogen	mg/L	NA		<0.3	1.2
Total Organic Carbon	mg/L			6.32	6.61
Total Phosphorus	mg/L	(c)	19. U.S. EPA Nutrient Numeric Endpoint Tool		
Total Suspended Solids	mg/L	58	14. NSQD, 1. Basin Plan	<1	<1
Turbidity	NTU	20	1. Basin Plan	8.76	1.18
Pesticides					
Chlorpyrifos	µg/L	0.02 (acute) / 0.014 (chronic)	12. CA Dept. of Fish & Game, 2000	<0.04	<0.04
Diazinon	µg/L	0.08 acute and 0.05 chronic	12. CA Dept. of Fish & Game, 2000, 11. Chollas Creek TMDL for Diazinon, 10. U.S. EPA, Aquatic Life Ambient Water Quality Criteria Diazinon	<0.04	<0.04
Malathion	µg/L	0.43 acute / 0.1 chronic	13. CA Dept. of Fish & Game, 1998, 5. Goldbook	<0.05	<0.05
Hardness					
Hardness	mg CaCO3/L			494	521
Total Metals					
Antimony	mg/L	0.006	1. Basin Plan	<0.001	<0.001
Arsenic	mg/L	0.05	1. Basin Plan	<0.001	<0.001
Cadmium	mg/L	0.005	1. Basin Plan	<0.001	<0.001
Chromium	mg/L	0.05	1. Basin Plan	<0.004	<0.004
Copper	mg/L	1.0	1. Basin Plan	<0.002	<0.002
Lead	mg/L	NA		<0.004	<0.004
Nickel	mg/L	0.1	1. Basin Plan	<0.002	<0.002
Selenium	mg/L	0.005	16. 40 CFR 131.38	<0.005	<0.005
Zinc	mg/L	5.0	1. Basin Plan	<0.010	<0.010

Table D.1-1. Dry Weather Monitoring Results for Santa Margarita WMA, 2007-2008.

Analyte	Units	Water Quality Benchmarks	Source	Santa Margarita River	
				MLS	MLS
				3/6/08	5/8/08
Dissolved Metals					
Antimony	mg/L	0.006	1. Basin Plan	<0.002	<0.002
Arsenic	mg/L	0.34 (acute) and 0.15 (chronic)	16. 40 CFR 131.38	<0.001	<0.001
Cadmium	mg/L	(e)	16. 40 CFR 131.38	<0.001	<0.001
Chromium	mg/L	(e)	16. 40 CFR 131.38	<0.004	<0.004
Copper	mg/L	(e)	16. 40 CFR 131.38	<0.001	<0.001
Lead	mg/L	(e)	16. 40 CFR 131.38	<0.001	<0.001
Nickel	mg/L	(e)	16. 40 CFR 131.38	<0.002	<0.002
Selenium	mg/L	NA	16. 40 CFR 131.38	<0.005	<0.005
Zinc	mg/L	(e)	16. 40 CFR 131.38	<0.010	<0.010
Toxicity					
<i>Ceriodaphnia</i> 96-hr	NOEC (%)	100			
<i>Ceriodaphnia</i> 7-day survival	NOEC (%)	100		100	100
<i>Ceriodaphnia</i> 7-day reproduction	NOEC (%)	100		100	100
<i>Hyalella</i> 96-hr	NOEC (%)	100			
<i>Selenastrum</i> 96-hr	NOEC (%)	100		100	100

- (a) Water Quality Benchmark for Enterococi are based on the maximum criteria for infrequently used freshwater area by the San Diego Regional Water Quality Control Plan for the San Diego Region (Basin Plan), 1994 (with amendments effective prior to April 25, 2007).
- (b) Water Quality Benchmark is based on CMC (salmonids absent) and CCC (early life stages present) using water temperature and pH described in the U.S. EPA, 1999 Update of Ambient Water Quality Criteria for Ammonia, EPA-822-R-99-014, December 1999.
- (c) Nutrient analytes for ambient conditions are assessed based on a weight of evidence approach using the EPA's Nutrient Numeric Endpoint Tool to determine if beneficial uses have potential for impairment.
- (d) Water Quality Benchmark for total dissolved solids is based on the San Diego Regional Water Quality Control Plan by watershed for the San Diego Region (Basin Plan), 1994 (with amendments effective prior to April 25, 2007).
- (e) Water Quality Benchmark for dissolved metal fractions are based on total hardness and are calculated as described by the USEPA Federal Register Doc. 40 CFR Part 131, May 18, 2000.
- NA indicate no criteria or published value was available or applicable to the matrix or program.

Shaded text – exceeds water quality benchmarks.

* Indicates detection limit exceeds water quality benchmark.

**Indicates no water at sampling time.

***Taken from composite sample.

Sources

Please refer to the San Diego County Copermittee Regional Monitoring Program Benchmark Sources for benchmark source citations.

Table D-1-2. Wet Weather Monitoring Results for Santa Margarita River WMA, 2007-2008.

Analyte	Units	Water Quality Benchmarks	Source	Santa Margarita River	
				MLS	MLS
				11/30/07	2/3/08
General/Physical/Organic					
Electrical Conductivity	umhos/cm		2. CCR, 5. Goldbook	1080	1310
Oil & Grease	mg/L	10	1. Basin Plan, 3. Anacostia River TMDL, 4. MSGP 2000	<5	<5
pH	pH scale	6.5-9.0	1. Basin Plan	7.99	7.96
Water Temperature	Celcius			12	13.67
Bacteriological					
Enterococci	MPN/100mL	NA	1. Basin Plan	1600	23
Fecal Coliform	MPN/100mL	400	1. Basin Plan REC-1/REC-2	170	23
Total Coliform	MPN/100mL	NA	1. Basin Plan	>1600	>1600
Wet Chemistry					
Ammonia as N	mg/L	(a)	6. U.S. EPA Water Quality Criteria (Freshwater)	<0.02	<0.02
Biochemical Oxygen Demand	mg/L	30	4. MSGP 2000, 8. McNeeley (1979)	2.09	<2.00
Chemical Oxygen Demand	mg/L	120	4. MSGP 2000	<25	<25
Dissolved Organic Carbon	mg/L			8.24	5.52
Dissolved Phosphorus	mg/L	2	4. MSGP 2000	0.26	0.14
Nitrate as N	mg/L	10	1. Basin Plan	0.08	0.98
Nitrite as N	mg/L	1	1. Basin Plan	<0.007	<0.007
Methylene Blue Active Substances	mg/L	0.5	1. Basin Plan	<0.1	<0.1
Total Dissolved Solids	mg/L	750 (b)	1. Basin Plan	716	719
Total Kjeldahl Nitrogen	mg/L			0.6	2.1
Total Organic Carbon	mg/L			11.7	6.99
Total Phosphorus	mg/L	2	4. MSGP 2000		
Total Suspended Solids	mg/L	100	4. MSGP 2000, 1. Basin Plan	<1	<1
Turbidity	NTU	20	1. Basin Plan	10.9	6.72
Pesticides					
Chlorpyrifos	µg/L	0.02 (acute) / 0.014 (chronic)	12. CA Dept. of Fish & Game, 2000		<0.04
Diazinon	µg/L	0.08 acute and 0.05 chronic	12. CA Dept. of Fish & Game, 2000, 11. Chollas Creek TMDL for Diazinon, 10. U.S. EPA, Aquatic Life Ambient Water Quality Criteria Diazinon		<0.04
Malathion	µg/L	0.43	13. CA Dept. of Fish & Game, 1998, 5. Goldbook		<0.05
Hardness					
Hardness	mg CaCO3/L			363	371
Total Metals					
Antimony	mg/L	NA	1. Basin Plan	<0.001	<0.001
Arsenic	mg/L	NA	1. Basin Plan	<0.001	<0.001
Cadmium	mg/L	NA	1. Basin Plan	<0.001	<0.001
Chromium	mg/L	NA	1. Basin Plan	<0.004	<0.004
Copper	mg/L	NA	1. Basin Plan	<0.002	<0.002
Lead	mg/L	NA		<0.004	<0.004
Nickel	mg/L	NA	1. Basin Plan	<0.002	<0.002
Selenium	mg/L	NA	16. 40 CFR 131.38	<0.005	<0.005
Zinc	mg/L	NA	1. Basin Plan	<0.010	<0.010

Table D-1-2. Wet Weather Monitoring Results for Santa Margarita River WMA, 2007-2008.

Analyte	Units	Water Quality Benchmarks	Source	Santa Margarita River	
				MLS	MLS
				11/30/07	2/3/08
Dissolved Metals					
Antimony	mg/L	0.006	1. Basin Plan	<0.002	<0.002
Arsenic	mg/L	0.34 (c)	16. 40 CFR 131.38	<0.001	<0.001
Cadmium	mg/L	(d)	16. 40 CFR 131.38	<0.001	<0.001
Chromium	mg/L	(d)	16. 40 CFR 131.38	<0.004	<0.004
Copper	mg/L	(d)	16. 40 CFR 131.38	<0.001	<0.001
Lead	mg/L	(d)	16. 40 CFR 131.38	<0.001	<0.001
Nickel	mg/L	(d)	16. 40 CFR 131.38	<0.002	<0.002
Selenium	mg/L	NA	16. 40 CFR 131.38	<0.005	<0.005
Zinc	mg/L	(d)	16. 40 CFR 131.38	<0.010	<0.010
Toxicity					
<i>Ceriodaphnia</i> 96-hr	NOEC (%)	100			
<i>Ceriodaphnia</i> 7-day survival	NOEC (%)	100		100	100
<i>Ceriodaphnia</i> 7-day reproduction	NOEC (%)	100		100	100
<i>Hyalella</i> 96-hr	NOEC (%)	100			
<i>Selenastrum</i> 96-hr	NOEC (%)	100		100	100

(a) Water Quality Benchmark is based on CMC (salmonids absent) using pH described in the U.S. EPA, 1999 Update of Ambient Water Quality Criteria for Ammonia, EPA-822-R-99-014, December 1999.

(b) Water Quality Benchmark for total dissolved solids is based on the San Diego Regional Water Quality Control Plan by watershed for the San Diego Region (Basin Plan), 1994 (with amendments effective prior to April 25, 2007).

(c) Water Quality Benchmark for dissolved metal fractions are based on a default water effects ratios (WER) value of 1 and are calculated as described by the USEPA Federal Register Doc. 40 CFR Part 131, May 18, 2000.

(d) Water Quality Benchmark for dissolved metal fractions are based on total hardness and are calculated as described by the USEPA Federal Register Doc. 40 CFR Part 131, May 18, 2000. The Criteria Maximum Concentration (CMC) was used.

NA indicate no criteria or published value was available or applicable to the matrix or program.

Sources

Please refer to the San Diego County Copermittee Regional Monitoring Program Benchmark Sources for benchmark source citations.

Table D.1-3. Analytes Measured at the Santa Margarita River Mass Loading Station.

Analyte	Units	Water Quality Benchmarks	Source	2001-2002	2002-2003		2003-2004		2004-2005	2005-2006	2007-2008		Frequency Above Benchmarks	Mean Ratio to Benchmarks
				11/29/01	2/12/03	2/25/03	2/3/04	2/24/04		2/28/06	11/30/07	2/3/08		
General / Physical / Organic														
Electrical Conductivity	umhos/cm	NA	2. CCR, 5. Goldbook	1410	1050	492	1170	643		717	1080	1310		
Oil And Grease	mg/L	10	1 Basin Plan, 3. Anacostia River TMDL, 4. MSGP 2000	<10	<5	<5	<1	<1		<1	<5	<5	0%	0.21
pH	pH scale	6.5-9.0	1. Basin Plan	7.9	7.5	7.4	7.8	7.75		7.73	7.99	7.96	0%	0.00
Water Temperature	Celcius				13.0	13.0				12	12	13.67		
Bacteriological														
Enterococci	MPN/100mL	NA	1. Basin Plan		130	300	4,106	5,172		11000	1600	23		
Fecal Coliform	MPN/100mL	400	1. Basin Plan REC-1/REC-2		>1,600	>1,600	500	1,300		500	170	23	71%	2.03
Total Coliform	MPN/100mL	NA	1. Basin Plan		>1,600	>1,600	2,800	17,000		16000	>1600	>1600		
Wet Chemistry														
Ammonia as N	mg/L	(a)	6. U.S. EPA Water Quality Criteria (Freshwater)	<0.1	<4	0.1	0.228	0.237		0.286	<0.02	<0.02	0%	0.02
Biochemical Oxygen Demand	mg/L	30	4. MSGP 2000, 8. McNeeley (1979)	<5	16	22	14.1	6.72		10	2.09	<2.00	0%	0.31
Chemical Oxygen Demand	mg/L	120	4. MSGP 2000	<30	185	447	28	18		72.6	<25	<25	25%	0.82
Dissolved Organic Carbon	mg/L										8.24	5.52		
Dissolved Phosphorus	mg/L	2	4. MSGP 2000	0.12	0.26	0.34	0.227	0.279			0.26	0.14	0%	0.10
Nitrate as N	mg/L	10	1. Basin Plan	0.5	1.2	1.5	0.985	1.21		1.62	0.08	0.98	0%	0.10
Nitrite as N	mg/L	1	1. Basin Plan	<0.1	<0.1	<0.1	<0.5	<0.5		<0.1	<0.007	<0.007	0%	0.09
Surfactants (MBAS)	mg/L	0.5	1. Basin Plan	0.05	0.18	<0.04	0.154	0.095		<0.5	<0.1	<0.1	0%	0.21
Total Dissolved Solids	mg/L	750 (b)	1. Basin Plan	814	616	374	830	446		490	716	719	25%	0.71
Total Kjeldahl Nitrogen	mg/L	NA		<0.5	0.6	0.7	1.92	1.46		0.677	0.6	2.1		
Total Organic Carbon	mg/L										11.7	6.99		
Total Phosphorus	mg/L	2	4. MSGP 2000	<0.2	0.3	0.85	0.437	0.309		<0.05			0%	0.13
Total Suspended Solids	mg/L	100	4. MSGP 2000, 1. Basin Plan	<5	405	3090	220	69		512	<1	<1	50%	5.37
Turbidity	NTU	20	1. Basin Plan	2.5	193	1160	147	0.095		362	10.9	6.72	50%	11.76
Pesticides														
Chlorpyrifos	µg/L	0.02	12. CA Dept. of Fish & Game, 2000	<0.01	<3.0*	<3.0*	0.015	0.040		<0.01		<0.04	20%	0.65
Diazinon	µg/L	0.08	12. CA Dept. of Fish & Game, 2000, 11. Chollas Creek TMDL for Diazinon, 10. U.S. EPA, Aquatic Life Ambient Water Quality Criteria Diazinon	0.08	<6.0*	<6.0*	0.011	0.031		<0.01		<0.04	0%	0.31
Malathion	µg/L	0.43	13. CA Dept. of Fish & Game, 1998, 5. Goldbook									<0.05		
Hardness														
Total Hardness	mg CaCO3/L			423	341	242	320	225		249	363	371		
Total Metals														
Antimony	mg/L	NA	1. Basin Plan	<0.002	<0.002	<0.002	<0.005	<0.005		0.001	<0.001	<0.001		
Arsenic	mg/L	NA	1. Basin Plan	<0.002	0.005	0.006	0.002	0.002		0.006	<0.001	<0.001		
Cadmium	mg/L	NA	1. Basin Plan	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001	<0.001		
Chromium	mg/L	NA	1. Basin Plan	0.004	0.018	0.053	<0.005	<0.005		0.024	<0.004	<0.004		
Copper	mg/L	NA	1. Basin Plan	0.01	0.017	0.064	0.008	0.009		0.032	<0.002	<0.002		
Lead	mg/L	NA		<0.005	0.008	0.039	0.010	0.007		0.008	<0.004	<0.004		
Nickel	mg/L	NA	1. Basin Plan	<0.005	0.013	0.024	0.003	0.003		0.013	<0.002	<0.002		
Selenium	mg/L	NA	16. 40 CFR 131.38	<0.005	0.009	<0.005	<0.005	<0.005		0.001	<0.005	<0.005		
Zinc	mg/L	NA	1. Basin Plan	0.04	0.05	0.2	0.035	0.027		0.093	<0.010	<0.010		
Dissolved Metals														
Antimony	mg/L	0.006	1. Basin Plan	<0.002	<0.002	<0.002	<0.005	<0.005		0.001	<0.002	<0.002		
Arsenic	mg/L	0.34 (c)	16. 40 CFR 131.38	<0.002	0.005	<0.002	<0.002	0.002		0.006	<0.001	<0.001	0%	0.01
Cadmium	mg/L	(d)	16. 40 CFR 131.38	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001	<0.001	0%	0.10
Chromium	mg/L	(d)	16. 40 CFR 131.38	0.003	0.002	0.004	<0.005	<0.005		0.024	<0.004	<0.004	0%	0.04
Copper	mg/L	(d)	16. 40 CFR 131.38	0.005	0.009	0.012	<0.005	0.007		0.030	<0.001	<0.001	13%	0.40
Lead	mg/L	(d)	16. 40 CFR 131.38	<0.005	0.005	<0.005	<0.002	0.005		0.008	<0.001	<0.001	13%	0.43
Nickel	mg/L	(d)	16. 40 CFR 131.38	<0.005	0.007	<0.005	<0.002	0.003		0.011	<0.002	<0.002	0%	0.03
Selenium	mg/L	NA	16. 40 CFR 131.38	<0.005	0.007	<0.005	<0.005	<0.005		0.001	<0.005	<0.005	0%	0.01
Zinc	mg/L	(d)	16. 40 CFR 131.38	<0.010	0.05	0.01	<0.02	0.029		0.086	<0.010	<0.010	0%	0.09
Toxicity														
<i>Ceriodaphnia</i> 96-hr	NOEC (%)	100		100	100	100	100	100		100			0%	1.00
<i>Ceriodaphnia</i> 7-day survival	NOEC (%)	100		100	100	100	100	100		100	100	100	0%	1.00
<i>Ceriodaphnia</i> 7-day reproduction	NOEC (%)	100		100	50	<25	>100	100		100	100	100	25%	1.50
<i>Hyalella</i> 96-hr	NOEC (%)	100		100	50	100	100	100		50			33%	1.33
<i>Selenastrum</i> 96-hr	NOEC (%)	100		100	100	100	NA	100		100	100	100	0%	1.00

No samples collected

See last page for footnotes and source references.

Table D.1-3. Analytes Measured at the Santa Margarita River Mass Loading Station.

Blank spaces have been verified and no data is available due to changes in the monitoring program.

(a) Water Quality Benchmark is based on CMC (salmonids absent) using pH described in the U.S. EPA, 1999 Update of Ambient Water Quality Criteria for Ammonia, EPA-822-R-99-014, December 1999.

(b) Water Quality Benchmark for total dissolved solids is based on the San Diego Regional Water Quality Control Plan by watershed for the San Diego Region (Basin Plan), 1994 (with amendments effective prior to April 25, 2007).

(c) Water Quality Benchmark for dissolved metal fractions are based on a default water effects ratios (WER) value of 1 and are calculated as described by the USEPA Federal Register Doc. 40 CFR Part 131, May 18, 2000.

(d) Water Quality Benchmark for dissolved metal fractions are based on total hardness and are calculated as described by the USEPA Federal Register Doc. 40 CFR Part 131, May 18, 2000. The Criteria Maximum Concentration (CMC) was used.

NA indicate no criteria or published value was available or applicable to the matrix or program.

Shaded text – exceeds water quality benchmark. Underlined results are above the CMC water quality benchmark.

* Indicates detection limit above water quality benchmark.

Sources

Please refer to the San Diego County Copermittee Regional Monitoring Program Benchmark Sources for benchmark source citations.

Table D.2-1. Dry Weather Monitoring Results for San Luis Rey WMA, 2007-2008.

Analyte	Units	Water Quality Benchmarks	Source	San Luis Rey			
				MLS	TWAS	MLS	TWAS
				9/18/07-9/19/07	9/18/07-9/19/07	5/13/08-5/14/08	5/13/08-5/14/08
General/Physical/Organic							
Electrical Conductivity	umhos/cm		2. CCR, 5. Goldbook	2,360	2,320	1,983	1,878
Oil & Grease	mg/L	10	1 Basin Plan, 3. Anacostia River TMDL	<5	1J	<5	<5
pH	pH scale	6.5-9.0	1. Basin Plan	7.74	7.42	7.87	7.68
Water Temperature	Celcius			18.2	18.9	16.3	15.90
Bacteriological							
Enterococci	MPN/100mL	151 (a)	1. Basin Plan	1,700	500	70	800
Fecal Coliform	MPN/100mL	400	1. Basin Plan REC-1/REC-2	800	170	110	140
Total Coliform	MPN/100mL	NA	1. Basin Plan	2,300	800	1,879	5,000
Wet Chemistry							
Ammonia as N	mg/L	(b)	6. U.S. EPA Water Quality Criteria (Freshwater)	0.04J	0.03J	0.03	0.03
Biochemical Oxygen Demand	mg/L	10	8. McNeeley (1979)	<2	<2	<2	3.6
Chemical Oxygen Demand	mg/L	120	4. MSGP 2000	61	160	18	16
Dissolved Organic Carbon	mg/L			4.02	5	6.8	6.4
Dissolved Phosphorus	mg/L	(c)	19. U.S. EPA Nutrient Numeric Endpoint Tool	0.14	0.04J	0.16	0.08
Nitrate as N	mg/L	(c)	19. U.S. EPA Nutrient Numeric Endpoint Tool	0.16	<0.01	1.23	0.48
Nitrite as N	mg/L	(c)	19. U.S. EPA Nutrient Numeric Endpoint Tool	<0.05	<0.05	<0.05	<0.05
Methylene Blue Active Substances	mg/L	0.5	1. Basin Plan	0.045	0.04	0.047	0.029
Total Dissolved Solids	mg/L	500 (d)	1. Basin Plan	1,685	1,740	1,630	1,552
Total Kjeldahl Nitrogen	mg/L	NA		0.7	0.56	0.56	1.1
Total Organic Carbon	mg/L			4.2	39.4	6.5	5.8
Total Phosphorus	mg/L	(c)	19. U.S. EPA Nutrient Numeric Endpoint Tool	0.16	0.1	0.301	0.147
Total Suspended Solids	mg/L	58	14. NSQD, 1. Basin Plan	4.7J	2J	36	10
Turbidity	NTU	20	1. Basin Plan	3.9	5.3	25.4	8.4
Pesticides							
Chlorpyrifos	µg/L	0.02 (acute) / 0.014 (chronic)	12. CA Dept. of Fish & Game, 2000	<0.002	<0.002	<0.002	<0.002
Diazinon	µg/L	0.08 acute and 0.05 chronic	12. CA Dept. of Fish & Game, 2000, 11. Chollas Creek TMDL for Diazinon, 10. U.S. EPA, Aquatic Life Ambient Water Quality Criteria Diazinon	<0.004	<0.004	<0.004	<0.004
Malathion	µg/L	0.43 acute / 0.1 chronic	13. CA Dept. of Fish & Game, 1998, 5. Goldbook	<0.006	<0.006	<0.006	<0.006
Hardness							
Hardness	mg CaCO3/L			450.4	499.8	440.4	447.7
Total Metals							
Antimony	mg/L	0.006	1. Basin Plan	0.0001J	<0.0005	0.0001J	0.0001J
Arsenic	mg/L	0.05	1. Basin Plan	0.0018	0.0012	0.0018	0.0014
Cadmium	mg/L	0.005	1. Basin Plan	<0.0004	<0.0004	<0.0004	<0.0004
Chromium	mg/L	0.05	1. Basin Plan	0.0001J	0.0001J	0.0001J	<0.0005
Copper	mg/L	1.0	1. Basin Plan	0.0005J	<0.0008	0.0036	0.0007J
Lead	mg/L	NA		0.00006J	<0.0001	0.0004	0.0001
Nickel	mg/L	0.1	1. Basin Plan	0.0010	0.0007	0.0017	0.0008
Selenium	mg/L	0.005	16. 40 CFR 131.38	0.0004J	<0.0005	0.0007	0.0006
Zinc	mg/L	5.0	1. Basin Plan	0.0011	0.0011	0.0042	0.0017

Table D.2-1. Dry Weather Monitoring Results for San Luis Rey WMA, 2007-2008.

Analyte	Units	Water Quality Benchmarks	Source	San Luis Rey			
				MLS	TWAS	MLS	TWAS
				9/18/07-9/19/07	9/18/07-9/19/07	5/13/08-5/14/08	5/13/08-5/14/08
Dissolved Metals							
Antimony	mg/L	0.006	1. Basin Plan	0.0001J	<0.0005	0.0001J	0.0001J
Arsenic	mg/L	0.34 (acute) and 0.15 (chronic)	16. 40 CFR 131.38	0.0016	0.0011	0.0017	0.0013
Cadmium	mg/L	(e)	16. 40 CFR 131.38	<0.0004	<0.0004	<0.0004	<0.0004
Chromium	mg/L	(e)	16. 40 CFR 131.38	<0.0005	<0.0005	<0.0005	<0.0005
Copper	mg/L	(e)	16. 40 CFR 131.38	0.0007J	<0.0008	0.0009	<0.0008
Lead	mg/L	(e)	16. 40 CFR 131.38	<0.0001	<0.0001	<0.0001	<0.0001
Nickel	mg/L	(e)	16. 40 CFR 131.38	0.0009	0.0006	0.0013	0.0007
Selenium	mg/L	NA	16. 40 CFR 131.38	0.0004J	<0.0005	0.0007	0.0006
Zinc	mg/L	(e)	16. 40 CFR 131.38	0.0001J	<0.0005	0.0007	0.0004J
Toxicity							
<i>Ceriodaphnia</i> 96-hr	NOEC (%)	100		100	100	100	100
<i>Ceriodaphnia</i> 7-day survival	NOEC (%)	100		100	100	100	100
<i>Ceriodaphnia</i> 7-day reproduction	NOEC (%)	100		100	100	100	100
<i>Hyalella</i> 96-hr	NOEC (%)	100		100	100	100	100
<i>Selenastrum</i> 96-hr	NOEC (%)	100		100	100	100	100

- (a) Water Quality Benchmark for Enterococci are based on the maximum criteria for infrequently used freshwater area by the San Diego Regional Water Quality Control Plan for the San Diego Region (Basin Plan) 1994 (with amendments effective prior to April 25, 2007).
- (b) Water Quality Benchmark is based on CMC (salmonids absent) and CCC (early life stages present) using water temperature and pH described in the U.S. EPA, 1999 Update of Ambient Water Quality Criteria for Ammonia, EPA-822-R-99-014, December 1999.
- (c) Nutrient analytes for ambient conditions are assessed based on a weight of evidence approach using the EPA's Nutrient Numeric Endpoint Tool to determine if beneficial uses have potential for impairment.
- (d) Water Quality Benchmark for total dissolved solids is based on the San Diego Regional Water Quality Control Plan by watershed for the San Diego Region (Basin Plan), 1994 (with amendments effective prior to April 25, 2007).
- (e) Water Quality Benchmark for dissolved metal fractions are based on total hardness and are calculated as described by the USEPA Federal Register Doc. 40 CFR Part 131, May 18, 2000.
- NA indicate no criteria or published value was available or applicable to the matrix or program.

Shaded text – exceeds water quality benchmarks.

Sources

Please refer to the San Diego County Copermittee Regional Monitoring Program Benchmark Sources for benchmark source citations.

Table D.2-2. Wet Weather Monitoring Results for San Luis Rey WMA, 2007-2008.

Analyte	Units	Water Quality Benchmarks	Source	San Luis Rey			
				MLS	TWAS-1	MLS	TWAS-1
				11/30/07	11/30/07	2/3/08-2/5/08	2/3/08-2/4/08
General/Physical/Organic							
Electrical Conductivity	umhos/cm		2. CCR, 5. Goldbook	496	1,945	1,759	1,467
Oil & Grease	mg/L	10	1. Basin Plan, 3. Anacostia River TMDL, 4. MSGP 2000	1.8J	1.5J	1.9J	<5
pH	pH scale	6.5-9.0	1. Basin Plan	7.57	7.72	8.38	8.05
Water Temperature	Celcius			14.80	14.20	11.80	12.10
Bacteriological							
Enterococci	MPN/100mL	NA	1. Basin Plan	30,000	11,000	3,000	3,000
Fecal Coliform	MPN/100mL	400	1. Basin Plan REC-1/REC-2	17,000	30,000	1,700	1,700
Total Coliform	MPN/100mL	NA	1. Basin Plan	28,000	220,000	50,000	50,000
Wet Chemistry							
Ammonia as N	mg/L	(a)	6. U.S. EPA Water Quality Criteria (Freshwater)	0.16	0.56	0.18	0.22
Biochemical Oxygen Demand	mg/L	30	4. MSGP 2000, 8. McNeeley (1979)	8.5	13	<2	<2
Chemical Oxygen Demand	mg/L	120	4. MSGP 2000	55	57	27	34
Dissolved Organic Carbon	mg/L			14.6	17.9	9.5	8.2
Dissolved Phosphorus	mg/L	2	4. MSGP 2000	0.76	1.1	0.35	0.24
Nitrate as N	mg/L	10	1. Basin Plan	0.7	3	3.27	3.6
Nitrite as N	mg/L	1	1. Basin Plan	0.06	0.07	0.03J	0.09
Methylene Blue Active Substances	mg/L	0.5	1. Basin Plan	0.21	0.039	0.057	0.048
Total Dissolved Solids	mg/L	500 (b)	1. Basin Plan	964	1,330	878	884
Total Kjeldahl Nitrogen	mg/L			1.4	4.2	1.8	2
Total Organic Carbon	mg/L			17.9	18.2	8.7	8
Total Phosphorus	mg/L	2	4. MSGP 2000	0.77	1.3	0.40	0.97
Total Suspended Solids	mg/L	100	4. MSGP 2000, 1. Basin Plan	24	235	129	456
Turbidity	NTU	20	1. Basin Plan	27	239	136	492
Pesticides							
Chlorpyrifos	µg/L	0.02 (acute) / 0.014 (chronic)	12. CA Dept. of Fish & Game, 2000	<0.002	0.062	<0.002	<0.002
Diazinon	µg/L	0.08 acute and 0.05 chronic	12. CA Dept. of Fish & Game, 2000, 11. Chollas Creek TMDL for Diazinon, 10. U.S. EPA, Aquatic Life Ambient Water Quality Criteria Diazinon	0.010	0.013	0.016	<0.004
Malathion	µg/L	0.43	13. CA Dept. of Fish & Game, 1998, 5. Goldbook	0.083	<0.006	<0.006	<0.006
Hardness							
Hardness	mg CaCO3/L			151	295.1	242	223
Total Metals							
Antimony	mg/L	NA	1. Basin Plan	0.0005	0.0003J	0.0002J	0.0002J
Arsenic	mg/L	NA	1. Basin Plan	0.0017	0.0021	0.0024	0.0029
Cadmium	mg/L	NA	1. Basin Plan	<0.0004	<0.0004	<0.0004	0.0003J
Chromium	mg/L	NA	1. Basin Plan	0.0010	0.0027	0.0016	0.0027
Copper	mg/L	NA	1. Basin Plan	0.0032	0.0117	0.0065	0.0176
Lead	mg/L	NA		0.0008	0.0045	0.0023	0.0090
Nickel	mg/L	NA	1. Basin Plan	0.0013	0.0029	0.0025	0.0039
Selenium	mg/L	NA	16. 40 CFR 131.38	0.0003J	0.0005	0.0006	0.0006
Zinc	mg/L	NA	1. Basin Plan	0.0122	0.0581	0.0149	0.0435

Table D.2-2. Wet Weather Monitoring Results for San Luis Rey WMA, 2007-2008.

Analyte	Units	Water Quality Benchmarks	Source	San Luis Rey			
				MLS	TWAS-1	MLS	TWAS-1
				11/30/07	11/30/07	2/3/08-2/5/08	2/3/08-2/4/08
Dissolved Metals							
Antimony	mg/L	0.0060	1. Basin Plan	0.0004J	0.0003J	0.0002J	0.0002J
Arsenic	mg/L	0.34 (c)	16. 40 CFR 131.38	0.0014	0.0015	0.0019	0.0015
Cadmium	mg/L	(d)	16. 40 CFR 131.38	<0.0004	<0.0004	<0.0004	<0.0004
Chromium	mg/L	(d)	16. 40 CFR 131.38	0.0006	0.0002J	0.0002J	0.0001J
Copper	mg/L	(d)	16. 40 CFR 131.38	0.0043	0.0040	0.0029	0.0024
Lead	mg/L	(d)	16. 40 CFR 131.38	0.00007J	0.00005J	<0.0001	<0.0001
Nickel	mg/L	(d)	16. 40 CFR 131.38	0.0011	0.0014	0.0014	0.0008
Selenium	mg/L	NA	16. 40 CFR 131.38	0.0002J	0.0005	0.0005	0.0006
Zinc	mg/L	(d)	16. 40 CFR 131.38	0.0050	0.0075	0.0025	0.0013
Toxicity							
<i>Ceriodaphnia</i> 96-hr	NOEC (%)	100		100	100	100	100
<i>Ceriodaphnia</i> 7-day survival	NOEC (%)	100		100	100	100	100
<i>Ceriodaphnia</i> 7-day reproduction	NOEC (%)	100		100	100	100	25
<i>Hyalella</i> 96-hr	NOEC (%)	100		100	100	100	100
<i>Selenastrum</i> 96-hr	NOEC (%)	100		100	100	100	100

(a) Water Quality Benchmark is based on CMC (salmonids absent) using pH described in the U.S. EPA, 1999 Update of Ambient Water Quality Criteria for Ammonia, EPA-822-R-99-014, December 1999.

(b) Water Quality Benchmark for total dissolved solids is based on the San Diego Regional Water Quality Control Plan by watershed for the San Diego Region (Basin Plan), 1994 (with amendments effective prior to April 25, 2007).

(c) Water Quality Benchmark for dissolved metal fractions are based on a default water effects ratios (WER) value of 1 and are calculated as described by the USEPA Federal Register Doc. 40 CFR Part 131 May 18, 2000.

(d) Water Quality Benchmark for dissolved metal fractions are based on total hardness and are calculated as described by the USEPA Federal Register Doc. 40 CFR Part 131, May 18, 2000. The Criteria: Maximum Concentration (CMC) was used.

NA indicate no criteria or published value was available or applicable to the matrix or program.

Shaded text – exceeds water quality benchmark.

Sources

Please refer to the San Diego County Copermittee Regional Monitoring Program Benchmark Sources for benchmark source citations.

Table D.2-3. Analytes Measured at the San Luis Rey River Mass Loading Station.

Analyte	Units	Water Quality Benchmarks	Source	2001-2002			2002-2003			2003-2004			2004-2005		
				11/29/01	2/17/02	3/17/02	11/8/02	2/11/03	2/25/03	11/12/03	2/2/04	2/18/04	10/27/04	2/11/05	2/18/05
General / Physical / Organic															
Electrical Conductivity	umhos/cm		2. CCR, 5. Goldbook	2370	2310	2450	4190	1965	2680	2860	2780	2810	927	2790	1865
Oil and Grease	mg/L	10	1 Basin Plan, 3. Anacostia River TMDL, 4. MSGP 2000	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
pH	pH scale	6.5-9.0	1. Basin Plan	7.5	7.5	7.6	6.40	7.32	7.67	7.44	7.94	8.2	7.20	No Data	8.06
Water Temperature	Celcius						19.70	11.7	13.3	15.8	10.7	13.5	14.30	15.10	14.50
Bacteriological															
Enterococci	MPN/100mL	NA	1. Basin Plan	800	80	900	500	800	16,000	1,300	700	130	80,000	5,000	13,000
Fecal Coliform	MPN/100mL	400	1. Basin Plan REC-1/REC-2	300	50	300	230	130	500	230	500	130	50,000	1,700	8,000
Total Coliform	MPN/100mL	NA	1. Basin Plan	2,300	130	300	300	300	1,700	2,800	1,300	230	170,000	11,000	11,000
Wet Chemistry															
Ammonia As N	mg/L	(a)	6. U.S. EPA Water Quality Criteria (Freshwater)	0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Biological Oxygen Demand	mg/L	30	4. MSGP 2000, 8. McNeeley (1979)	2.3	2	2.9	<2.0	3.34	2.02	<2	33	2.05	4.09	2.61	<2
Chemical Oxygen Demand	mg/L	120	4. MSGP 2000	<25	61	48	38	49	25	33	<25	<25	32	58	40
Dissolved Organic Carbon	mg/L						1.49	6.86	9.36	9.3	2.8	80.1	37.9	5.81	4.27
Dissolved Phosphorus	mg/L	2	4. MSGP 2000	0.16	<0.05	0.16	0.22	0.19	0.10	0.33	0.08	0.11	0.46	0.36	<0.05
Nitrate As N	mg/L	10	1. Basin Plan	0.9	0.6	0.5	0.72	1.10	0.65	0.8	0.94	1.64	0.58	5.99	5.18
Nitrite As N	mg/L	1	1. Basin Plan	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Surfactants (MBAS)	mg/L	0.5	1. Basin Plan	<0.5	<0.5	<0.5	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Total Dissolved Solids	mg/L	500 (b)	1. Basin Plan	1480	1340	1420	1730	1500	818	1840	1530	2410	652	1280	1100
Total Kjeldahl Nitrogen	mg/L	NA		2.2	1.3	1.2	<0.5	0.8	0.7	3.2	<0.5	0.8	2.4	1.7	2
Total Organic Carbon	mg/L						5.61	11.10	4.93	7.24	6.56	76.2	51.3	7.8	10.2
Total Phosphorus	mg/L	2	4. MSGP 2000	1.12	0.4	0.2	0.29	0.23	0.22	0.29	0.13	0.13	0.58	0.84	0.57
Total Suspended Solids	mg/L	100	4. MSGP 2000, 1. Basin Plan	<20	<20	<20	14	8	152	<20	<20	<20	165	30	78
Turbidity	NTU	20	1. Basin Plan	5.7	2.14	2.1	6.96	3.3	185	2.98	4.49	1.23	136	11.9	31.3
Pesticides															
Chlorpyrifos	µg/L	0.02	12. CA Dept. of Fish & Game, 2000	<0.03*	<0.03*	<0.03*	<0.03*	<0.03*	<0.03*	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Diazinon	µg/L	0.08	12. CA Dept. of Fish & Game, 2000, 11. Chollas Creek TMDL for Diazinon, 10. U.S. EPA, Aquatic Life Ambient Water Quality Criteria Diazinon	0.12	<0.03	<0.03	<0.03	<0.03	0.053	<0.01	<0.01	<0.01	<0.01	0.030	<0.01
Malathion	µg/L	0.43	13. CA Dept. of Fish & Game, 1998, 5. Goldbook				<0.10	<0.10	<0.10	<0.01	0.021	<0.01	<0.01	<0.01	<0.01
Hardness															
Total Hardness	mg CaCO3/L			737	821	818	779	832	463	891	749	867	353	650	581
Total Metals															
Antimony	mg/L	NA	1. Basin Plan	<0.002	<0.002	<0.002	<0.002	0.002	0.003	<0.005	<0.005	<0.006	<0.005	<0.005	<0.005
Arsenic	mg/L	NA	1. Basin Plan	<0.001	0.002	0.001	0.001	0.001	0.003	0.003	0.004	0.003	0.002	0.003	<0.002
Cadmium	mg/L	NA	1. Basin Plan	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Chromium	mg/L	NA	1. Basin Plan	<0.005	<0.005	<0.005	<0.005	<0.005	0.007	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	mg/L	NA	1. Basin Plan	<0.005	<0.005	<0.005	<0.005	0.014	0.009	<0.005	0.006	<0.005	0.011	0.005	0.005
Lead	mg/L	NA		<0.002	<0.002	<0.002	0.004	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Nickel	mg/L	NA	1. Basin Plan	<0.002	<0.002	<0.002	<0.002	0.002	0.006	0.002	0.002	<0.002	0.011	0.002	0.002
Selenium	mg/L	NA	16. 40 CFR 131.38	<0.002	0.005	<0.002	<0.004	<0.004	<0.004	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	mg/L	NA	1. Basin Plan	<0.020	<0.020	<0.020	<0.02	<0.02	0.022	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Dissolved Metals															
Antimony	mg/L	0.006	1. Basin Plan	<0.002	<0.002	<0.002	<0.002	0.002	0.004	<0.005	<0.005	<0.006	<0.005	<0.005	<0.005
Arsenic	mg/L	0.34 (c)	16. 40 CFR 131.38	<0.001	<0.001	<0.001	0.001	0.002	0.001	<0.002	0.002	0.002	<0.002	<0.002	<0.002
Cadmium	mg/L	(d)	16. 40 CFR 131.38	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Chromium	mg/L	(d)	16. 40 CFR 131.38	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	mg/L	(d)	16. 40 CFR 131.38	<0.005	<0.005	<0.005	<0.005	0.018	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Lead	mg/L	(d)	16. 40 CFR 131.38	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Nickel	mg/L	(d)	16. 40 CFR 131.38	<0.002	0.002	<0.002	0.002	0.003	<0.002	<0.002	0.003	<0.002	<0.002	0.002	0.002
Selenium	mg/L	NA	16. 40 CFR 131.38	<0.002	<0.002	<0.002	<0.004	<0.004	<0.004	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	mg/L	(d)	16. 40 CFR 131.38	<0.020	<0.020	<0.020	<0.020	0.070	0.024	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Toxicity															
<i>Ceriodaphnia</i> 96-hr survival	NOEC (%)	100		100	100	100	100	100	100	100	100	100	100	100	100
<i>Ceriodaphnia</i> 7-day survival	NOEC (%)	100		100	100	100	100	100	100	100	100	100	100	100	100
<i>Ceriodaphnia</i> 7-day reproduction	NOEC (%)	100		100	100	50	100	100	100	50	100	100	100	100	100
<i>Hyalella</i> 96-hr	NOEC (%)	100		100	100	100	100	100	100	100	100	100	100	100	100
<i>Selenastrum</i> 96-hr	NOEC (%)	100		100	100	100	100	100	100	100	50	100	100	100	100

See last page for footnotes and source references.

Table D.2-3. Analytes Measured at the San Luis Rey River Mass Loading Station.

Analyte	Units	Water Quality Benchmarks	Source	2005-2006			2006-2007			2007-2008		Frequency Above Benchmarks	Mean Ratio to Benchmarks
				10/17/05	12/31/05	2/19/06	10/14/06	1/31/07	2/19/07	11/30/07	2/3/08-2/5/08		
General / Physical / Organic													
Electrical Conductivity	umhos/cm		2. CCR, 5. Goldbook	2580	2990	2300	2650	2530	2450	496	1,759		
Oil and Grease	mg/L	10	1 Basin Plan, 3. Anacostia River TMDL, 4. MSGP 2000	<1	<1	<1	<5	<5	5	1.8J	1.9J	0%	0.11
pH	pH scale	6.5-9.0	1. Basin Plan	7.30	8.42	6.97	7.35	8.02	7.35	7.57	8.38	5%	0.06
Water Temperature	Celcius			17.00	13.00	11.00	15.50	12.50	14.30	14.80	11.80		
Bacteriological													
Enterococci	MPN/100mL	NA	1. Basin Plan	800	3,000	1,300	35,000	6,000	2,200	30,000	3,000		
Fecal Coliform	MPN/100mL	400	1. Basin Plan REC-1/REC-2	8,000	3,000	1,300	3,000	500	900	17,000	1,700	65%	12.18
Total Coliform	MPN/100mL	NA	1. Basin Plan	17,000	3,000	11,000	170,000	5,000	2,200	28,000	50,000		
Wet Chemistry													
Ammonia As N	mg/L	(a)	6. U.S. EPA Water Quality Criteria (Freshwater)	0.33	0.19	0.16	0.64	0.31	0.22	0.16	0.18	0%	0.01
Biological Oxygen Demand	mg/L	30	4. MSGP 2000, 8. McNeeley (1979)	3.49	<2	<2	5.56	35.7	7.78	8.5	<2	10%	0.20
Chemical Oxygen Demand	mg/L	120	4. MSGP 2000	45	<25	30	67	44	28	55	27	0%	0.30
Dissolved Organic Carbon	mg/L			5.96	3.59	7.44	78.2	13.3	8.08	14.6	9.5		
Dissolved Phosphorus	mg/L	2	4. MSGP 2000	0.81	0.31	0.36	<0.05	0.21	0.11	0.76	0.35	0%	0.13
Nitrate As N	mg/L	10	1. Basin Plan	3.7	3.78	4.36	1.72	<0.05	2.5	0.7	3.27	0%	0.20
Nitrite As N	mg/L	1	1. Basin Plan	<0.05	<0.05	<0.05	0.05	<0.05	<0.05	0.06	0.03J	0%	0.03
Surfactants (MBAS)	mg/L	0.5	1. Basin Plan	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.21	0.057	0%	0.42
Total Dissolved Solids	mg/L	500 (b)	1. Basin Plan	1240	1500	1450	1380	1280	1460	964	878	100%	2.73
Total Kjeldahl Nitrogen	mg/L	NA		1.5	0.8	2.2	3.8	1.9	1.2	1.4	1.8		
Total Organic Carbon	mg/L			20	5.62	8.43	78.2	13.8	8.29	17.9	8.7		
Total Phosphorus	mg/L	2	4. MSGP 2000	0.87	0.32	0.58	0.68	0.37	0.22	0.77	0.40	0%	0.23
Total Suspended Solids	mg/L	100	4. MSGP 2000, 1. Basin Plan	47	27	<20	29	<20	<20	24	129	15%	0.40
Turbidity	NTU	20	1. Basin Plan	11.4	15.6	13.1	21.4	4.8	4.78	27	136	30%	1.57
Pesticides													
Chlorpyrifos	µg/L	0.02	12. CA Dept. of Fish & Game, 2000	<0.01	<0.02	<0.02	<0.002	<0.002	<0.002	<0.002	<0.002	0%	0.20
Diazinon	µg/L	0.08	12. CA Dept. of Fish & Game, 2000, 11. Chollas Creek TMDL for Diazinon, 10. U.S. EPA, Aquatic Life Ambient Water Quality Criteria Diazinon	<0.01	<0.02	<0.02	<0.004	<0.004	<0.004	0.010	0.016	5%	0.21
Malathion	µg/L	0.43	13. CA Dept. of Fish & Game, 1998, 5. Goldbook	0.117	<0.02	<0.02	0.183	0.042	<0.006	0.083	<0.006	0%	0.09
Hardness													
Total Hardness	mg CaCO3/L			627	872	827	724	760	802	151	242		
Total Metals													
Antimony	mg/L	NA	1. Basin Plan	<0.005	<0.005	<0.005	0.002	<0.002	0.003	0.0005	0.0002J		
Arsenic	mg/L	NA	1. Basin Plan	0.003	0.003	0.001	0.01	<0.001	0.001	0.0017	0.0024		
Cadmium	mg/L	NA	1. Basin Plan	<0.001	<0.001	<0.001	0.002	<0.001	<0.001	<0.0004	<0.0004		
Chromium	mg/L	NA	1. Basin Plan	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.001	0.0016		
Copper	mg/L	NA	1. Basin Plan	0.009	<0.005	<0.005	0.006	0.006	0.003	0.0032	0.0065		
Lead	mg/L	NA		<0.002	<0.002	<0.002	0.002	0.001	<0.001	0.00078	0.0023		
Nickel	mg/L	NA	1. Basin Plan	0.003	0.002	0.002	0.003	<0.002	0.002	0.0013	0.0025		
Selenium	mg/L	NA	16. 40 CFR 131.38	<0.005	<0.004	<0.005	<0.004	<0.004	<0.004	0.0003J	0.0006		
Zinc	mg/L	NA	1. Basin Plan	<0.02	<0.02	<0.02	<0.02	0.022	<0.02	0.012	0.015		
Dissolved Metals													
Antimony	mg/L	0.006	1. Basin Plan	<0.005	<0.005	<0.005	<0.002	<0.002	0.003	0.0004J	0.0002J		
Arsenic	mg/L	0.34 (c)	16. 40 CFR 131.38	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.0014	0.0019	0%	0.00
Cadmium	mg/L	(d)	16. 40 CFR 131.38	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0004	<0.0004	0%	0.02
Chromium	mg/L	(d)	16. 40 CFR 131.38	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.0006	0.0002J	0%	0.00
Copper	mg/L	(d)	16. 40 CFR 131.38	0.006	<0.005	<0.005	0.005	0.005	0.002	0.0043	0.0029	0%	0.09
Lead	mg/L	(d)	16. 40 CFR 131.38	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	0.00007J	<0.0001	0%	0.00
Nickel	mg/L	(d)	16. 40 CFR 131.38	0.003	0.002	<0.002	0.003	<0.002	0.002	0.0011	0.0014	0%	0.00
Selenium	mg/L	NA	16. 40 CFR 131.38	<0.005	<0.004	<0.005	<0.004	<0.004	<0.004	0.0002J	0.0005	0%	0.01
Zinc	mg/L	(d)	16. 40 CFR 131.38	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.005	0.0025	0%	0.04
Toxicity													
<i>Ceriodaphnia</i> 96-hr survival	NOEC (%)	100		100	100	100	100	100	100	100	100	0%	1.00
<i>Ceriodaphnia</i> 7-day survival	NOEC (%)	100		100	100	100	100	100	100	100	100	0%	1.00
<i>Ceriodaphnia</i> 7-day reproduction	NOEC (%)	100		100	100	100	100	100	100	100	100	10%	1.10
<i>Hyalella</i> 96-hr	NOEC (%)	100		100	100	100	50	100	100	100	100	5%	1.05
<i>Selenastrum</i> 96-hr	NOEC (%)	100		100*	100	100	100	100	100	100	100	5%	1.05

See last page for footnotes and source references.

Table D.2-3. Analytes Measured at the San Luis Rey River Mass Loading Station.

Blank spaces have been verified and no data is available due to changes in the monitoring program.

(a) Water Quality Benchmark is based on CMC (salmonids absent) using pH described in the U.S. EPA, 1999 Update of Ambient Water Quality Criteria for Ammonia, EPA-822-R-99-014, December 1999.

(b) Water Quality Benchmark for total dissolved solids is based on the San Diego Regional Water Quality Control Plan by watershed for the San Diego Region (Basin Plan), 1994 (with amendments effective prior to April 25, 2007).

(c) Water Quality Benchmark for dissolved metal fractions are based on a default water effects ratios (WER) value of 1 and are calculated as described by the USEPA Federal Register Doc. 40 CFR Part 131, May 18, 2000.

(d) Water Quality Benchmark for dissolved metal fractions are based on total hardness and are calculated as described by the USEPA Federal Register Doc. 40 CFR Part 131, May 18, 2000. The Criteria Maximum Concentration (CMC) was used.

NA indicate no criteria or published value was available or applicable to the matrix or program.

Shaded text – exceeds water quality benchmark. Underlined results are above the **CMC** water quality benchmark.

* Indicates detection limit above water quality benchmark.

Sources

Please refer to the San Diego County Copermittee Regional Monitoring Program Benchmark Sources for benchmark source citations.

Table D.3-1. Dry Weather Monitoring Results for Carlsbad WMA, 2007-2008.

Analyte	Units	Water Quality Benchmarks	Source	Loma Alta Creek		Buena Vista Creek		Agua Hedionda				Escondido Creek				
				TWAS	TWAS	TWAS	TWAS	MLS	TWAS	MLS	TWAS	MLS	TWAS	MLS	TWAS	
				9/18/07-9/19/07	5/13/08-5/14/08	9/18/07-9/19/07	5/13/08-5/14/08	9/18/07-9/19/07	9/18/07-9/19/07	5/13/08-5/14/08	5/13/08-5/14/08	9/18/07-9/19/07	9/18/07-9/19/07	5/13/08-5/14/08	5/13/08-5/14/08	
General/Physical/Organic																
Electrical Conductivity	umhos/cm		2. CCR, 5. Goldbook	5,520	4,650	2,620	19	3,480	2,610	3,390	1,844	1,988	1,552	1,813	1,619	
Oil & Grease	mg/L	10	1 Basin Plan, 3. Anacostia River TMDL	1.3J	<5	1.1J	<5	<5	1.7J	<5	<5	<5	<5	<5	<5	
pH	pH scale	6.5-9.0	1. Basin Plan	8.01	8.12	7.97	8.65	7.73	7.93	8.49	8.01	8.14	8.4	7.89	8.30	
Water Temperature	Celcius			25.20	22.30	20.80	20.20	20.7	19.60	23.00	17.00	20.7	21.6	16.70	18.20	
Bacteriological																
Enterococci	MPN/100mL	151 (a)	1. Basin Plan	80	120	1,100	80	300	40	300	260	230	80	230	140	
Fecal Coliform	MPN/100mL	400	1. Basin Plan REC-1/REC-2	230	230	80	80	500	300	1,300	2,300	260	500	90	40	
Total Coliform	MPN/100mL	NA	1. Basin Plan	3,000	1,300	8,000	13,000	3,000	3,000	2,800	2,300	7,000	2,200	2,200	1,100	
Wet Chemistry																
Ammonia as N	mg/L	(b)	6. U.S. EPA Water Quality Criteria (Freshwater)	0.08	0.09	0.03J	0.1	0.03J	0.02J	<0.03	<0.03	0.03J	0.04J	0.21	0.03	
Biochemical Oxygen Demand	mg/L	10	8. McNeeley (1979)	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	
Chemical Oxygen Demand	mg/L	120	4. MSGP 2000	30	35	11	17	12	13	19	14	9	150	30	13	
Dissolved Organic Carbon	mg/L			8.4	11.6	4.1	5.3	4.2	4.9	5.2	5.8	4.3	3.5	5	5	
Dissolved Phosphorus	mg/L	(c)	19. U.S. EPA Nutrient Numeric Endpoint Tool	0.03J	0.02J	0.1	0.07	0.02J	0.11	0.05	0.11	0.09	0.05	0.03J	0.07	
Nitrate as N	mg/L	(c)	19. U.S. EPA Nutrient Numeric Endpoint Tool	0.21	0.16	0.53	1.3	0.21	0.11	0.8	5.6	1.9	5.6	0.05	6.37	
Nitrite as N	mg/L	(c)	19. U.S. EPA Nutrient Numeric Endpoint Tool	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.06	<0.05	0.04J	
Methylene Blue Active Substances	mg/L	0.5	1. Basin Plan	0.057	0.079	0.044	0.034	0.044	0.049	0.041	0.055	0.051	0.036	0.05	0.049	
Total Dissolved Solids	mg/L	500 (d)	1. Basin Plan	2,470	2,458	1,357	1,394	1,900	1,460	2,076	1,438	1,591	1,204	2,620	1,242	
Total Kjeldahl Nitrogen	mg/L	NA		0.98	2.4	0.98	1.1	0.7	0.56	0.7	0.98	0.7	0.84	1.5	1.1	
Total Organic Carbon	mg/L			10.6	12	5.1	5.2	5.1	6	9	5.7	5.4	13	5.2	4.6	
Total Phosphorus	mg/L	(c)	19. U.S. EPA Nutrient Numeric Endpoint Tool	<0.05	0.041J	0.09	0.07	0.02J	0.1	0.033J	0.11	0.08	0.05	0.11	0.057	
Total Suspended Solids	mg/L	58	14. NSQD, 1. Basin Plan	4.5J	10.3	14.8	4.7J	7.5	3.2J	2J	1.7J	5.7	1.5J	2.4J	1J	
Turbidity	NTU	20	1. Basin Plan	2	3.5	3	4	3.1	<2	1.2J	1.2J	4.3	1.1J	7.8	2	
Pesticides																
Chlorpyrifos	µg/L	0.02 (acute) / 0.014 (chronic)	12. CA Dept. of Fish & Game, 2000	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	
Diazinon	µg/L	0.08 acute and 0.05 chronic	12. CA Dept. of Fish & Game, 2000, 11. Chollas Creek TMDL for Diazinon, 10. U.S. EPA, Aquatic Life Ambient Water Quality Criteria Diazinon	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	0.0031J	<0.004	<0.004	<0.004	<0.004	
Malathion	µg/L	0.43 acute / 0.1 chronic	13. CA Dept. of Fish & Game, 1998, 5. Goldbook	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	
Hardness																
Hardness	mg CaCO3/L			520.5	500.4	365	360.6	531.4	453.6	548.7	492.4	445.0	315.2	603.7	342.3	
Total Metals																
Antimony	mg/L	0.006	1. Basin Plan	0.0004J	0.0003J	0.0004J	0.0003J	0.0002J	0.0003J	0.0002J	0.0003J	0.0003J	0.0003J	0.0003J	<0.0005	0.0003J
Arsenic	mg/L	0.05	1. Basin Plan	0.0049	0.0047	0.0078	0.0075	0.0041	0.0027	0.0046	0.0032	0.0015	0.0014	0.0026	0.0014	
Cadmium	mg/L	0.005	1. Basin Plan	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	
Chromium	mg/L	0.05	1. Basin Plan	0.0001J	0.0001J	0.0002J	0.0001J	0.0002J	0.0001J	0.0005	0.0001J	0.0003J	0.0003J	<0.0005	0.0003J	
Copper	mg/L	1.0	1. Basin Plan	0.0012	0.0014	0.0016	0.0022	0.0015	0.0015	0.0014	0.0019	0.0029	0.0018	<0.0008	0.0017	
Lead	mg/L	NA		0.00009J	0.0003	0.0002	0.0002	<0.0001	0.00006J	<0.0001	0.00006J	0.0002	0.00007J	0.00005J	0.0001	
Nickel	mg/L	0.1	1. Basin Plan	0.0022	0.0026	0.0014	0.0014	0.0025	0.0025	0.0031	0.0022	0.0017	0.0011	0.0014	0.0009	
Selenium	mg/L	0.005	16. 40 CFR 131.38	0.0007	0.0010	0.0010	0.0018	0.0008	0.0002J	0.0015	0.0007	0.0017	0.0021	0.0002J	0.0030	
Zinc	mg/L	5.0	1. Basin Plan	0.0025	0.0042	0.0043	0.0043	0.0058	0.0034	0.0012	0.0038	0.0328	0.0048	0.0032	0.0069	
Dissolved Metals																
Antimony	mg/L	0.006	1. Basin Plan	0.0004J	0.0003J	0.0004J	0.0003J	0.0002J	0.0003J	0.0002J	0.0003J	0.0003J	0.0003J	0.0003J	<0.0005	0.0003J
Arsenic	mg/L	0.34 (acute) and 0.15 (chronic)	16. 40 CFR 131.38	0.0048	0.0051	0.0075	0.0074	0.0039	0.0029	0.0044	0.0031	0.0015	0.0015	0.0025	0.0015	
Cadmium	mg/L	(e)	16. 40 CFR 131.38	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	
Chromium	mg/L	(e)	16. 40 CFR 131.38	0.0001J	0.0001J	0.0001J	0.0001J	0.0001J	0.0001J	0.0001J	0.0001J	<0.0005	0.0001J	0.0003J	<0.0005	
Copper	mg/L	(e)	16. 40 CFR 131.38	0.0009	0.0011	0.0012	0.0014	0.0011	0.0012	0.0012	0.0017	0.0022	0.0016	<0.0008	0.0014	
Lead	mg/L	(e)	16. 40 CFR 131.38	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	
Nickel	mg/L	(e)	16. 40 CFR 131.38	0.0021	0.0025	0.0013	0.0014	0.0023	0.0024	0.0030	0.0021	0.0014	0.0010	0.0014	0.0008	
Selenium	mg/L	NA	16. 40 CFR 131.38	0.0007	0.0012	0.0009	0.0019	0.0008	0.0002J	0.0015	0.0007	0.0017	0.0022	0.0002J	0.0031	
Zinc	mg/L	(e)	16. 40 CFR 131.38	0.0017	0.0020	0.0020	0.0020	0.0034	0.0023	0.0008	0.0031	0.0256	0.0035	0.0025	0.0039	
Toxicity																
<i>Ceriodaphnia</i> 96-hr	NOEC (%)	100		100	100	100	100	100	100	100	100	100	100	100	100	
<i>Ceriodaphnia</i> 7-day survival	NOEC (%)	100		100	100	100	100	100	100	100	100	100	100	100	100	
<i>Ceriodaphnia</i> 7-day reproduction	NOEC (%)	100		50	100	100	100	50	100	100	100	50	100	100	100	
<i>Hyalella</i> 96-hr	NOEC (%)	100		100	100	100	100	100	100	100	100	100	100	100	100	
<i>Selenastrum</i> 96-hr	NOEC (%)	100		100	50	100	100	6.25	50	100	100	100	100	50	100	

See last page for footnotes and source references.

Table D.3-1. Dry Weather Monitoring Results for Carlsbad WMA, 2007-2008.

- (a) Water Quality Benchmark for Enterococi are based on the maximum criteria for infrequently used freshwater area by the San Diego Regional Water Quality Control Plan for the San Diego Region (Basin Plan), 1994 (with amendments effective prior to April 25, 2007).
 - (b) Water Quality Benchmark is based on CMC (salmonids absent) and CCC (early life stages present) using water temperature and pH described in the U.S. EPA, 1999 Update of Ambient Water Quality Criteria for Ammonia, EPA-822-R-99-014, December 1999.
 - (c) Nutrient analytes for ambient conditions are assessed based on a weight of evidence approach using the EPA's Nutrient Numeric Endpoint Tool to determine if beneficial uses have potential for impairment.
 - (d) Water Quality Benchmark for total dissolved solids is based on the San Diego Regional Water Quality Control Plan by watershed for the San Diego Region (Basin Plan), 1994 (with amendments effective prior to April 25, 2007).
 - (e) Water Quality Benchmark for dissolved metal fractions are based on total hardness and are calculated as described by the USEPA Federal Register Doc. 40 CFR Part 131, May 18, 2000.
- NA indicate no criteria or published value was available or applicable to the matrix or program.

Shaded text – exceeds water quality benchmarks.

* Indicates detection limit exceeds water quality Benchmark.

**Indicates no water at sampling time.

Sources

Please refer to the San Diego County Copermittee Regional Monitoring Program Benchmark Sources for benchmark source citations.

Table D.3-2. Wet Weather Monitoring Results for Carlsbad WMA, 2007-2008.

Analyte	Units	Water Quality Benchmarks	Source	Loma Alta Creek		Buena Vista Creek		Agua Hedionda				Escondido Creek			
				TWAS-1	TWAS-1	TWAS-1	TWAS-1	MLS	TWAS-1	MLS	TWAS-1	MLS	TWAS-1	MLS	TWAS-1
				11/30/07	2/3/08	11/30/07	2/3/08	11/30/07	11/30/07	2/3/08	2/3/08	11/30/07	11/30/07	2/3/08-2/4/08	2/3/08
General/Physical/Organic															
Electrical Conductivity	umhos/cm		2. CCR, 5. Goldbook	707	471	286	361	345	254	749	423	496	252	1,759	165
Oil & Grease	mg/L	10	1. Basin Plan, 3. Anacostia River TMDL, 4. MSGP 2000	2.7J	1.7J	6.3	3.7J	2.2J	3.3J	2.1J	2.2J	3.1J	4J	1.5J	1.9J
pH	pH scale	6.5-9.0	1. Basin Plan	7.81	8.04	7.75	8.02	7.31	8.34	8.10	8.02	7.57	7.41	8.38	8.32
Water Temperature	Celsius			15.20	12.50	15.90	13.60	16.30	16.60	13.30	13.20	16.10	16.00	12.10	12.40
Bacteriological															
Enterococci	MPN/100mL	NA	1. Basin Plan	80,000	13,000	70,000	17,000	110,000	80,000	3,000	22,000	130,000	80,000	3,000	23,000
Fecal Coliform	MPN/100mL	400	1. Basin Plan REC-1/REC-2	22,000	1,700	28,000	5,000	130,000	110,000	5,000	2,200	110,000	17,000	1,100	5,000
Total Coliform	MPN/100mL	NA	1. Basin Plan	130,000	35,000	70,000	80,000	130,000	170,000	30,000	70,000	800,000	50,000	22,000	170,000
Wet Chemistry															
Ammonia as N	mg/L	(a)	6. U.S. EPA Water Quality Criteria (Freshwater)	0.58	0.45	0.68	0.13	0.68	0.74	0.07	0.09	0.38	0.48	0.1	0.13
Biochemical Oxygen Demand	mg/L	30	4. MSGP 2000, 8. McNeeley (1979)	16	<2	20	5.3	7.9	11	2.5	2.7	9.1	15	5.5	2.8
Chemical Oxygen Demand	mg/L	120	4. MSGP 2000	49	29	60	26	42	62	25	23	47	62	24	19
Dissolved Organic Carbon	mg/L			13.1	6.6	15.2	5.4	12.1	14.7	5.4	5.4	13.1	13	6.9	4
Dissolved Phosphorus	mg/L	2	4. MSGP 2000	0.66	0.19	0.95	0.18	0.53	0.74	0.15	0.26	0.51	0.3	0.33	0.12
Nitrate as N	mg/L	10	1. Basin Plan	1	0.27	1.6	1.06	1.3	2.5	0.89	1.9	1.6	1.7	1.6	0.8
Nitrite as N	mg/L	1	1. Basin Plan	0.07	<0.05	0.07	0.03J	0.07	0.1	<0.05	<0.03	0.08	0.1	0.03J	0.03J
Methylene Blue Active Substances	mg/L	0.5	1. Basin Plan	0.021	0.067	0.045	0.064	<0.01	0.03	0.037	0.1	0.28	0.34	0.107	0.12
Total Dissolved Solids	mg/L	500 (b)	1. Basin Plan	476	200	434	402	406	504	580	406	448	546	364	116
Total Kjeldahl Nitrogen	mg/L			3.9	0.7	5.9	1.1	2.7	3.9	1.1	1.1	2.9	3.2	1.1	0.84
Total Organic Carbon	mg/L			14.3	6.7	16.6	5.9	13.4	15.9	5.3	5.6	14.6	15.2	6.6	4.5
Total Phosphorus	mg/L	2	4. MSGP 2000	1.02	0.302	1.19	0.434	1.3	1.3	0.34	0.4	0.63	0.60	0.46	0.33
Total Suspended Solids	mg/L	100	4. MSGP 2000, 1. Basin Plan	665	101	520	290	840	440	215	122	160	180	46	96
Turbidity	NTU	20	1. Basin Plan	329	65	231	112	406	304	121	108	126	114	75.3	82.2
Pesticides															
Chlorpyrifos	µg/L	0.02 (acute) / 0.014 (chronic)	12. CA Dept. of Fish & Game, 2000	<0.002	<0.002	<0.002	<0.002	0.0938	0.25	0.0354	0.07	<0.002	<0.002	<0.002	<0.002
Diazinon	µg/L	0.08 acute and 0.05 chronic	12. CA Dept. of Fish & Game, 2000, 11. Chollas Creek TMDL for Diazinon, 10. U.S. EPA, Aquatic Life Ambient Water Quality Criteria Diazinon	0.037	0.007	0.042	<0.004	0.035	0.037	0.007	0.015	0.015	0.067	0.007	0.042
Malathion	µg/L	0.43	13. CA Dept. of Fish & Game, 1998, 5. Goldbook	0.146	<0.006	0.106	0.020	0.398	0.058	0.034	0.048	0.136	0.175	0.038	0.048
Hardness															
Hardness	mg CaCO3/L			57.5	92.8	68.2	83.1	80	88.5	126.4	86.6	95.7	48.7	87.6	42.7
Total Metals															
Antimony	mg/L	NA	1. Basin Plan	0.0006	0.0008	0.0011	0.0008	0.0005	0.0006	0.0005	0.0006	0.0010	0.0012	0.0007	0.0008
Arsenic	mg/L	NA	1. Basin Plan	0.0050	0.0035	0.0081	0.0044	0.0054	0.0035	0.0038	0.0023	0.0023	0.0018	0.0015	0.0013
Cadmium	mg/L	NA	1. Basin Plan	0.0003J	<0.0004	0.0005	0.0002J	0.0004	0.0003J	0.0002J	<0.0004	0.0003J	0.0002J	<0.0004	<0.0004
Chromium	mg/L	NA	1. Basin Plan	0.0042	0.0011	0.0056	0.0019	0.0055	0.0065	0.0021	0.0016	0.0023	0.0028	0.0011	0.0017
Copper	mg/L	NA	1. Basin Plan	0.0232	0.0069	0.0479	0.0178	0.0373	0.0379	0.0158	0.0115	0.0151	0.0180	0.0068	0.0125
Lead	mg/L	NA		0.0183	0.0042	0.0193	0.0072	0.0099	0.0099	0.0039	0.0032	0.0067	0.0091	0.0025	0.0062
Nickel	mg/L	NA	1. Basin Plan	0.0060	0.0019	0.0092	0.0044	0.0115	0.0084	0.0065	0.0025	0.0036	0.0035	0.0014	0.0019
Selenium	mg/L	NA	16. 40 CFR 131.38	0.0003J	0.0002J	0.0005	0.0003J	0.0005	0.0006	0.0005	0.0003J	0.0006	0.0004J	0.0004J	0.0002J
Zinc	mg/L	NA	1. Basin Plan	0.1202	0.0353	0.2828	0.1068	0.1185	0.1632	0.0583	0.0509	0.0834	0.1277	0.0329	0.0926
Dissolved Metals															
Antimony	mg/L	0.0060	1. Basin Plan	0.0008	0.0009	0.0011	0.0009	0.0006	0.0009	0.0006	0.0007	0.0009	0.0012	0.0008	0.0008
Arsenic	mg/L	0.34 (c)	16. 40 CFR 131.38	0.0029	0.0030	0.0040	0.0030	0.0027	0.0025	0.0022	0.0020	0.0017	0.0015	0.0013	0.0010
Cadmium	mg/L	(d)	16. 40 CFR 131.38	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004
Chromium	mg/L	(d)	16. 40 CFR 131.38	0.0003J	0.0005	0.0004J	0.0005	0.0003J	0.0005	0.0003J	0.0005	0.0005	0.0007	0.0006	0.0006
Copper	mg/L	(d)	16. 40 CFR 131.38	0.0034	0.0035	0.0044	0.0036	0.0042	0.0051	0.0033	0.0042	0.0048	0.0053	0.0037	0.0034
Lead	mg/L	(d)	16. 40 CFR 131.38	0.0002	<0.0001	0.0002	<0.0001	0.00005J	0.00009J	<0.0001	<0.0001	0.0003	0.0003	<0.0001	<0.0007
Nickel	mg/L	(d)	16. 40 CFR 131.38	0.0014	0.0012	0.0020	0.0012	0.0022	0.0021	0.0002	0.0012	0.0014	0.0015	0.0009	0.0007
Selenium	mg/L	NA	16. 40 CFR 131.38	0.0002J	0.0003J	0.0004J	0.0003J	0.0005	0.0005	0.0006	0.0004J	0.0007	0.0004J	0.0004J	0.0002J
Zinc	mg/L	(d)	16. 40 CFR 131.38	0.0062	0.0062	0.0109	0.0075	0.0054	0.0125	0.0038	0.0089	0.0134	0.0262	0.0068	0.0186
Toxicity															
Ceriodaphnia 96-hr	NOEC (%)	100		100	100	100	100	100	100	100	100	100	100	100	100
Ceriodaphnia 7-day survival	NOEC (%)	100		100	100	100	100	100	100	100	100	100	100	100	100
Ceriodaphnia 7-day reproduction	NOEC (%)	100		100	100	100	100	100	100	100	100	100	100	100	100
Hyalella 96-hr	NOEC (%)	100		25	50	50	50	12.5	25	50	25	12.5	25	50	50
Selenastrum 96-hr	NOEC (%)	100		100	100	100	100	100	100	100	100	100	100	100	100

See last page for footnotes and source references.

Table D.3-2. Wet Weather Monitoring Results for Carlsbad WMA, 2007-2008.

- (a) Water Quality Benchmark is based on CMC (salmonids absent) using pH described in the U.S. EPA, 1999 Update of Ambient Water Quality Criteria for Ammonia, EPA-822-R-99-014, December 1999.
 - (b) Water Quality Benchmark for total dissolved solids is based on the San Diego Regional Water Quality Control Plan by watershed for the San Diego Region (Basin Plan), 1994 (with amendments effective prior to April 25, 2007).
 - (c) Water Quality Benchmark for dissolved metal fractions are based on a default water effects ratios (WER) value of 1 and are calculated as described by the USEPA Federal Register Doc. 40 CFR Part 131, May 18, 2000.
 - (d) Water Quality Benchmark for dissolved metal fractions are based on total hardness and are calculated as described by the USEPA Federal Register Doc. 40 CFR Part 131, May 18, 2000. The Criteria Maximum Concentration (CMC) was used.
- NA indicate no criteria or published value was available or applicable to the matrix or program.

Shaded text – exceeds water quality benchmark.

Sources

Please refer to the San Diego County Copermittee Regional Monitoring Program Benchmark Sources for benchmark source citations

Table D.3-3. Analytes Measured at the Agua Hedionda Creek Mass Loading Station.

Analyte	Units	Water Quality Benchmarks	Source	1998-1999			1999-2000			2000-2001			2001-2002			2002-2003		
				11/8/98	1/31/99	3/15/99	1/25/00	2/20/00	3/5/00	10/27/00	1/8/01	2/23/01	2/17/02	3/8/02	3/17/02	11/8/02	2/11/03	2/25/03
General / Physical / Organic																		
Electrical Conductivity	umhos/cm	NA	2. CCR, 5. Goldbook	652	1560	2270	2160	1172	1194	2220	3180	645	1320	2000	1520	955	588	548
Oil And Grease	mg/L	10	1 Basin Plan, 3. Anacostia River TMDL, 4. MSGP 2000	0.67	<0.5	<0.5	3.24	3.54	2.28	<1	<1	1	2	<1	2	<1.00	1.54	<1.00
pH	pH scale	6.5-9.0	1. Basin Plan										7.6	7.8	7.5	7.76	7.5	7.67
Water Temperature	Celcius															17.4	13.9	13.7
Bacteriological																		
Enterococci	MPN/100mL	NA	1. Basin Plan							3,000	9,000	13,000	13,000	11,000	30,000	50,000	13,000	110,000
Fecal Coliform	MPN/100mL	400	1. Basin Plan REC-1/REC-2	1,600	240	1,600	1,600	1,600	<2	500	11,000	13,000	13,000	500	24,000	23,000	7,000	5,000
Total Coliform	MPN/100mL	NA	1. Basin Plan	241,900	8,130	197,000	1,600	1,600	300	13,000	50,000	23,000	23,000	1,700	24,000	80,000	50,000	50,000
Wet Chemistry																		
Ammonia As Nitrogen	mg/L	(a)	6. U.S. EPA Water Quality Criteria (Freshwater)	0.3	0.15	0.21	0.4	<0.1	0.11	0.84	0.6	0.3	<0.1	0.1	0.1	0.25	0.25	0.62
Biological Oxygen Demand	mg/L	30	4. MSGP 2000, 8. McNeeley (1979)	20	<3	5.25	6	2.98	6.6	2	8.9	5	8	2.1	7.6	4.32	20.4	5.6
Chemical Oxygen Demand	mg/L	120	4. MSGP 2000	34	<5	21	70	66	41	62	69	56	50	44	61	88	46	60
Dissolved Organic Carbon	mg/L															11.0	9.75	11.9
Dissolved Phosphorus	mg/L	2	4. MSGP 2000	0.57	0.12	0.1	0.12	0.22	<0.1	0.06	0.22	0.42	<0.05	0.08	0.16	0.13	0.20	0.14
Nitrate Nitrogen As N	mg/L	10	1. Basin Plan	2.1	0.86	1.1	1.6	1.42	1.58	0.4	1.3	1.1	1.1	0.7	1.2	1.27	1.15	0.55
Nitrite Nitrogen As N	mg/L	1	1. Basin Plan	<0.05	<0.05	<0.05	0.057	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	<0.05
Surfactants (MBAS)	mg/L	0.5	1. Basin Plan	0.25	0.07	<0.05	0.33	0.21	0.08	<0.5*	<0.5*	<0.5*	<0.5*	<0.5*	<0.5*	<0.1	<0.1	<0.1
Total Dissolved Solids	mg/L	500 (b)	1. Basin Plan		892	1611	1356	335	362	1300	1290	487	1050	1250	389	851	641	310
Total Kjeldahl Nitrogen	mg/L	NA			0.44	2.8	0.85	4.02	2.11	2.45	3	4.06	1.5	2.3	2.6	1.8	0.9	2.4
Total Organic Carbon	mg/L															20.3	13.8	5.21
Total Phosphorus	mg/L	2	4. MSGP 2000	0.72	0.13	0.12	0.16	1.04	0.74	0.11	0.24	0.62	0.5	0.25	0.53	0.87	0.83	1.14
Total Suspended Solids	mg/L	100	4. MSGP 2000, 1. Basin Plan		35	5	65	134	286	<20	131	442	39	152	335	508	380	674
Turbidity	NTU	20	1. Basin Plan		8	14	22	52	58	6.4	66	302	9.5	16	55.1	264	184	290
Pesticides																		
Chlorpyrifos	µg/L	0.02	12. CA Dept. of Fish & Game, 2000			<0.5*	<0.5*	<0.5*	<0.5*	<0.05*	<0.5*	<0.05*	<0.03*	<0.03*	<0.03*	0.047	<0.03*	<0.03*
Diazinon	µg/L	0.08	12. CA Dept. of Fish & Game, 2000, 11. Chollas Creek TMDL for Diazinon, 10. U.S. EPA, Aquatic Life Ambient Water Quality Criteria Diazinon		<0.5*	0.38	<0.5*	<0.5*	<0.5*	0.41	<0.5*	0.1	0.18	0.13	0.28	0.464	0.194	0.320
Malathion	µg/L	0.43	13. CA Dept. of Fish & Game, 1998, 5. Goldbook													0.10	0.36	0.11
Hardness																		
Total Hardness	mg CaCO3/L			137	365	568	52.2	155	35.3	680	532	201	592	669	290	418	370	205
Total Metals																		
Antimony	mg/L	NA	1. Basin Plan		<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.003	0.003
Arsenic	mg/L	NA	1. Basin Plan		<0.001	<0.001	<0.001	0.018	0.007	0.005	0.005	0.007	0.004	0.004	0.003	0.008	0.005	0.010
Cadmium	mg/L	NA	1. Basin Plan		<0.0003	<0.0003	<0.0003	0.001	0.00025	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Chromium	mg/L	NA	1. Basin Plan		<0.005	0.12	<0.005	<0.005	<0.005	<0.005	<0.005	0.015	0.042	<0.005	<0.005	0.006	0.009	0.017
Copper	mg/L	NA	1. Basin Plan		<0.005	<0.005	<0.005	0.054	0.020	<0.005	0.010	0.031	0.006	0.010	0.008	0.021	0.02	0.042
Lead	mg/L	NA			<0.001	0.0017	<0.001	<0.001	<0.005	<0.002	0.002	0.010	<0.002	<0.002	0.003	0.008	0.006	0.008
Nickel	mg/L	NA	1. Basin Plan		<0.005	0.010	<0.005	0.050	<0.005	0.007	0.007	0.010	0.007	0.006	0.003	0.009	0.007	0.014
Selenium	mg/L	NA	16. 40 CFR 131.38		<0.001	<0.001	<0.001	0.002	<0.001	0.002	0.003	<0.002	0.006	<0.002	<0.002	<0.002	<0.004	<0.004
Zinc	mg/L	NA	1. Basin Plan		0.194	0.035	0.010	0.110	0.050	<0.020	0.030	0.070	<0.020	0.027	<0.020	0.047	0.053	0.089
Dissolved Metals																		
Antimony	mg/L	0.006	1. Basin Plan				<0.0015	<0.0015	<0.0015	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.002	0.002
Arsenic	mg/L	0.34 (c)	16. 40 CFR 131.38				<0.001	0.011	<0.001	0.005	0.003	0.003	<0.001	0.002	0.002	0.004	0.003	0.003
Cadmium	mg/L	(d)	16. 40 CFR 131.38				<0.00025	<0.00025	<0.00025	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Chromium	mg/L	(d)	16. 40 CFR 131.38				<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	mg/L	(d)	16. 40 CFR 131.38				<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.006	<0.005	<0.005	0.041	0.010
Lead	mg/L	(d)	16. 40 CFR 131.38				<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Nickel	mg/L	(d)	16. 40 CFR 131.38				<0.005	<0.005	<0.005	0.007	0.005	0.002	0.004	0.005	<0.002	0.005	0.003	0.002
Selenium	mg/L	NA	16. 40 CFR 131.38				<0.001	<0.001	<0.001	<0.002	0.002	<0.002	<0.002	<0.002	<0.002	<0.004	<0.004	<0.004
Zinc	mg/L	(d)	16. 40 CFR 131.38				0.01	<0.001	0.005	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.291	0.030
Toxicity																		
<i>Ceriodaphnia</i> 96-hr	NOEC (%)	100											100	100	100	50	100	100
<i>Ceriodaphnia</i> 7-day survival	NOEC (%)	100											100	100	100	50	50	50
<i>Ceriodaphnia</i> 7-day reproduction	NOEC (%)	100											100	100	100	50	100	50
<i>Hyalella</i> 96-hr	NOEC (%)	100											100	25	100	100	50	50
<i>Selenastrum</i> 96-hr	NOEC (%)	100											100	100	100	100	100	100

See last page for footnotes and source references.

Table D.3-3. Analytes Measured at the Agua Hedionda Creek Mass Loading Station.

Analyte	Units	Water Quality Benchmarks	Source	2003-2004			2004-2005			2005-2006			2006-2007			2007-2008		Frequency Above Benchmarks	Mean Ratio to Benchmarks
				11/12/03	1/19/03	2/18/04	10/17/04	02/11/05	02/18/05	10/17/05	12/31/05	2/19/06	10/14/06	1/30/07	2/19/07	11/30/07	2/3/08		
General / Physical / Organic																			
Electrical Conductivity	umhos/cm	NA	2. CCR, 5. Goldbook	1203	2610	647	1760	502	700	1248	2760	1268	587	2440	951	345	749		
Oil And Grease	mg/L	10	1 Basin Plan, 3. Anacostia River TMDL, 4. MSGP 2000	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<5	<5	2.2J	2.1J	0%	0.12
pH	pH scale	6.5-9.0	1. Basin Plan	7.70	8.00	7.61	7.50	No Data	7.76	7.38	8.22	6.70	7.30	7.86	7.39	7.31	8.10	5%	0.06
Water Temperature	Celcius			16.00	14.20	14.10	17.60	15.10	13.50	18.00	14.30	9.50	15.70	13.30	13.40	16.30	13.30		
Bacteriological																			
Enterococci	MPN/100mL	NA	1. Basin Plan	11,000	5,000	3,000	280,000	7,000	50,000	22,000	17,000	23,000	500,000	3,000	8,000	110,000	3,000		
Fecal Coliform	MPN/100mL	400	1. Basin Plan REC-1/REC-2	5,000	2,300	2,300	30,000	5,000	50,000	14,000	5,000	11,000	22,000	11,000	3,000	130,000	5,000	96%	35.65
Total Coliform	MPN/100mL	NA	1. Basin Plan	17,000	5,000	3,000	300,000	17,000	80,000	110,000	70,000	80,000	50,000	50,000	30,000	130,000	30,000		
Wet Chemistry																			
Ammonia As Nitrogen	mg/L	(a)	6. U.S. EPA Water Quality Criteria (Freshwater)	0.43	<0.1	0.3	0.82	0.23	0.18	0.64	0.43	0.24	0.81	0.88	0.91	0.68	0.07	0%	0.03
Biological Oxygen Demand	mg/L	30	4. MSGP 2000, 8. McNeeley (1979)	45.3	3.52	16	32.2	4.67	3.64	7.76	8.59	<2	15.3	49.4	9.84	7.9	2.5	10%	0.36
Chemical Oxygen Demand	mg/L	120	4. MSGP 2000	260	124	106	279	75	39	157	81	85	552	115	33	42	25	17%	0.79
Dissolved Organic Carbon	mg/L			19.6	8.28	32.9	28.9	7.3	7.2	10.8	7.78	15.2	32.5	16.6	8.91	12.1	5.4		
Dissolved Phosphorus	mg/L	2	4. MSGP 2000	0.53	0.88	0.16	1.1	0.44	0.51	0.31	0.23	0.32	0.31	0.39	0.1	0.53	0.15	0%	0.15
Nitrate Nitrogen As N	mg/L	10	1. Basin Plan	3.1	1.7	3.2	1.93	2.41	0.88	2.23	1.66	2.58	1.77	<0.05	0.95	1.3	0.89	0%	0.15
Nitrite Nitrogen As N	mg/L	1	1. Basin Plan	0.06	<0.05	<0.05	<0.05	<0.05	0.09	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.07	<0.05	0%	0.03
Surfactants (MBAS)	mg/L	0.5	1. Basin Plan	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.01	0.037	0%	0.36
Total Dissolved Solids	mg/L	500 (b)	1. Basin Plan	951	<20	851	852	752	416	617	1010	800	518	806	573	406	580	69%	1.47
Total Kjeldahl Nitrogen	mg/L	NA		11	7.6	3.5	14.1	1.3	3.6	5.1	4.2	2.7	2.5	3.5	2.7	2.7	1.1		
Total Organic Carbon	mg/L			18.1	14.5	47.2	44.7	7.31	14.2	34.3	18.7	17.5	47.5	17.9	9.49	13.4	5.3		
Total Phosphorus	mg/L	2	4. MSGP 2000	0.63	2.28	0.56	2.15	0.47	1.12	0.32	0.47	0.47	0.98	0.43	0.28	1.3	0.34	7%	0.34
Total Suspended Solids	mg/L	100	4. MSGP 2000, 1. Basin Plan	842	<20	403	962	246	859	597	344	2210	1160	346	120	840	215	76%	4.26
Turbidity	NTU	20	1. Basin Plan	295	135	27.7	383	27.5	214	67.1	194	825	321	181	68.3	406	121	79%	7.95
Pesticides																			
Chlorpyrifos	µg/L	0.02	12. CA Dept. of Fish & Game, 2000	<0.01	<0.01	0.121	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.002	<0.002	<0.002	0.0938	0.0354	27%	1.16
Diazinon	µg/L	0.08	12. CA Dept. of Fish & Game, 2000, 11. Chollas Creek TMDL for Diazinon, 10. U.S. EPA, Aquatic Life Ambient Water Quality Criteria Diazinon	0.165	0.051	0.068	0.267	0.044	<0.01	0.024	<0.02	<0.02	0.451	<0.004	<0.004	0.035	0.007	52%	1.95
Malathion	µg/L	0.43	13. CA Dept. of Fish & Game, 1998, 5. Goldbook	<0.01	0.331	0.076	0.330	0.083	<0.01	0.247	0.622	0.035	0.436	0.064	0.062	0.398	0.034	12%	0.45
Hardness																			
Total Hardness	mg CaCO3/L			680	576	403	422	387	225	442	606	532	419	413	300	80	126.4		
Total Metals																			
Antimony	mg/L	NA	1. Basin Plan	<0.005	<0.006	<0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.003	0.002	0.003	0.0005	0.0005		
Arsenic	mg/L	NA	1. Basin Plan	0.015	0.008	0.008	0.008	0.007	<0.002	0.009	0.009	0.004	0.016	0.003	0.003	0.0054	0.0038		
Cadmium	mg/L	NA	1. Basin Plan	0.002	<0.001	<0.001	0.002	<0.001	<0.001	<0.001	<0.001	<0.001	0.003	<0.001	<0.001	0.0004	0.0002J		
Chromium	mg/L	NA	1. Basin Plan	0.021	<0.005	0.009	<0.005	<0.005	<0.005	<0.005	0.013	<0.005	0.013	<0.005	0.007	0.0055	0.0021		
Copper	mg/L	NA	1. Basin Plan	0.055	0.02	0.031	0.032	0.012	0.018	0.03	0.028	0.021	0.036	0.015	0.025	0.037	0.016		
Lead	mg/L	NA		0.012	0.002	0.007	0.007	0.004	0.006	0.008	0.006	0.004	0.015	0.006	0.004	0.0099	0.0039		
Nickel	mg/L	NA	1. Basin Plan	0.026	0.006	0.008	0.028	0.007	0.007	0.015	0.013	0.014	0.026	0.008	0.008	0.0115	0.0065		
Selenium	mg/L	NA	16. 40 CFR 131.38	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.004	<0.005	<0.004	<0.004	<0.004	0.0005	0.0005		
Zinc	mg/L	NA	1. Basin Plan	0.148	0.036	0.083	0.270	0.042	0.060	0.116	0.077	0.102	0.199	0.093	0.075	0.12	0.058		
Dissolved Metals																			
Antimony	mg/L	0.006	1. Basin Plan	<0.005	<0.006	<0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002	<0.002	0.003	0.0006	0.0006		
Arsenic	mg/L	0.34 (c)	16. 40 CFR 131.38	0.002	0.002	0.003	<0.002	<0.002	<0.002	0.001	<0.001	<0.001	0.001	<0.001	<0.001	0.0027	0.0022	0%	0.01
Cadmium	mg/L	(d)	16. 40 CFR 131.38	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0004	<0.0004	0%	0.03
Chromium	mg/L	(d)	16. 40 CFR 131.38	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.0003J	0.0003J	0%	0.00
Copper	mg/L	(d)	16. 40 CFR 131.38	<0.005	0.008	0.005	0.006	0.005	<0.005	<0.005	0.005	0.006	0.003	0.006	0.004	0.0042	0.0033	0%	0.17
Lead	mg/L	(d)	16. 40 CFR 131.38	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	0.00005J	<0.0001	0%	0.00
Nickel	mg/L	(d)	16. 40 CFR 131.38	0.004	0.002	0.002	0.007	0.003	0.002	0.007	0.003	0.003	0.003	0.003	0.003	0.0022	0.0002	0%	0.00
Selenium	mg/L	NA	16. 40 CFR 131.38	<0.005	<0.02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.004	<0.005	<0.004	<0.004	<0.004	0.0005	0.0006	0%	0.01
Zinc	mg/L	(d)	16. 40 CFR 131.38	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.041	<0.02	<0.02	<0.02	<0.02	<0.02	0.0054	0.0038	0%	0.07
Toxicity																			
<i>Ceriodaphnia</i> 96-hr	NOEC (%)	100		100	100	100	100	100	100	100	100	100	50	100	100	100	100	10%	1.10
<i>Ceriodaphnia</i> 7-day survival	NOEC (%)	100		100	100	100	100	100	100	100	100	100	25	100	100	100	100	20%	1.30
<i>Ceriodaphnia</i> 7-day reproduction	NOEC (%)	100		100	100	100	100	100	100	100	100	100	25	100	100	100	100	15%	1.25
<i>Hyalella</i> 96-hr	NOEC (%)	100		100	100	50	25	100	100	50	25	100	<6.25	25	25	12.5	50	60%	3.10
<i>Selenastrum</i> 96-hr	NOEC (%)	100		100	100	100	100	100	100	100	100	100	100	100	100	100	100	0%	1.00

See last page for footnotes and source references.

Table D.3-3. Analytes Measured at the Agua Hedionda Creek Mass Loading Station.

Blank spaces have been verified and no data is available due to changes in the monitoring program.

(a) Water Quality Benchmark is based on CMC (salmonids absent) using pH described in the U.S. EPA, 1999 Update of Ambient Water Quality Criteria for Ammonia, EPA-822-R-99-014, December 1999.

(b) Water Quality Benchmark for total dissolved solids is based on the San Diego Regional Water Quality Control Plan by watershed for the San Diego Region (Basin Plan), 1994 (with amendments effective prior to April 25, 2007).

(c) Water Quality Benchmark for dissolved metal fractions are based on a default water effects ratios (WER) value of 1 and are calculated as described by the USEPA Federal Register Doc. 40 CFR Part 131, May 18, 2000.

(d) Water Quality Benchmark for dissolved metal fractions are based on total hardness and are calculated as described by the USEPA Federal Register Doc. 40 CFR Part 131, May 18, 2000. The Criteria Maximum Concentration (CMC) was used.

NA indicate no criteria or published value was available or applicable to the matrix or program.

Shaded text – exceeds water quality benchmark. Underlined results are above the **CMC** water quality benchmark.

* Indicates detection limit above water quality benchmark.

Sources

Please refer to the San Diego County Copermittee Regional Monitoring Program Benchmark Sources for benchmark source citations.

Table D.3-4. Analytes Measured at the Escondido Creek Mass Loading Station.

Analyte	Units	Water Quality Benchmarks	Source	2001-2002			2002-2003			2003-2004			2004-2005		
				11/29/01	2/17/02	3/8/02	11/8/02	2/11/03	2/25/03	11/12/03	2/3/04	3/2/04	10/17/04	02/11/05	02/18/05
General / Physical / Organic															
Electrical Conductivity	umhos/cm	NA	2. CCR, 5. Goldbook	1810	2540	1620	1826	1192	1675	1736	1452	1595	2860	2530	1390
Oil And Grease	mg/L	10	1 Basin Plan, 3. Anacostia River TMDL, 4. MSGP 2000	<1	<1	1	<1.00	1.16	<1.00	<1	<1	<1	<1	<1	<1
pH	pH scale	6.5-9.0	1. Basin Plan	7.7	7.7	7.7	7.55	7.46	7.41	7.78	8.02	7.83	7.91	8.16	8.10
Water Temperature	Celcius						15.3	14.6	16.8	16.00	12.10	12.50	17.80	13.60	14.20
Bacteriological															
Enterococci	MPN/100mL	NA	1. Basin Plan	8,000	1,400	17,000	50,000	80,000	80,000	22,000	170,000	80,000	8,000	1,700	50,000
Fecal Coliform	MPN/100mL	400	1. Basin Plan REC-1/REC-2	3,000	8,000	1,700	13,000	23,000	22,000	17,000	23,000	17,000	1,300	1,100	50,000
Total Coliform	MPN/100mL	NA	1. Basin Plan	50,000	30,000	8,000	30,000	50,000	80,000	70,000	30,000	80,000	17,000	13,000	230,000
Wet Chemistry															
Ammonia As N	mg/L	(a)	6. U.S. EPA Water Quality Criteria (Freshwater)	0.4	0.19	0.18	0.29	0.32	0.41	<0.1	0.18	1.2	0.33	0.26	0.32
Biological Oxygen Demand	mg/L	30	4. MSGP 2000, 8. McNeeley (1979)	5.2	4.4	5.3	4.07	9.93	5.00	4.4	43.1	21.7	6.26	3.32	5.2
Chemical Oxygen Demand	mg/L	120	4. MSGP 2000	<25	25	40	73	51	69	45	126	59	68	37	42
Dissolved Organic Carbon	mg/L						4.1	11.1	9.86	10.9	6.31	13.4	29	3.86	6.47
Dissolved Phosphorus	mg/L	2	4. MSGP 2000	0.29	<0.05	0.14	0.32	0.32	0.13	0.36	0.25	0.22	0.26	<0.05	<0.05
Nitrate As N	mg/L	10	1. Basin Plan	2.6	3.2	2.2	2.32	0.95	2.25	1.72	1.66	3.8	2.71	7.2	6.32
Nitrite As N	mg/L	1	1. Basin Plan	<0.05	<0.05	<0.05	<0.05	0.08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Surfactants (MBAS)	mg/L	0.5	1. Basin Plan	<0.5	<0.5	<0.5	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Total Dissolved Solids	mg/L	500 (b)	1. Basin Plan	1150	1460	1160	1360	681	717	1300	665	1310	1460	1410	965
Total Kjeldahl Nitrogen	mg/L	NA		2.1	1.2	1.6	1.6	2.0	1.7	3.2	4.2	1.7	2	0.7	3
Total Organic Carbon	mg/L						14.5	14.0	8.04	11.1	13.1	12.7	34	6.9	13.8
Total Phosphorus	mg/L	2	4. MSGP 2000	1.75	0.8	0.29	0.49	0.62	0.72	0.46	0.52	0.3	0.28	0.26	0.62
Total Suspended Solids	mg/L	100	4. MSGP 2000, 1. Basin Plan	53	<20	60	54	150	221	75	<20	55	60	72	264
Turbidity	NTU	20	1. Basin Plan	31.3	4.33	24.5	38.3	111	192	40.1	116	26	15.4	13.4	117
Pesticides															
Chlorpyrifos	µg/L	0.02	12. CA Dept. of Fish & Game, 2000	<0.03*	<0.03*	<0.03*	<0.03*	<0.03*	0.030	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Diazinon	µg/L	0.08	12. CA Dept. of Fish & Game, 2000, 11. Chollas Creek TMDL for Diazinon, 10. U.S. EPA, Aquatic Life Ambient Water Quality Criteria Diazinon	0.94	0.27	0.27	0.122	0.163	0.063	0.061	0.067	0.037	<0.01	<0.01	<0.01
Malathion	µg/L	0.43	13. CA Dept. of Fish & Game, 1998, 5. Goldbook				<0.10	<0.10	<0.10	0.205	0.037	0.047	<0.01	<0.01	<0.01
Hardness															
Total Hardness	mg CaCO3/L			564	681	532	530	365	388	610	284	547	700	663	514
Total Metals															
Antimony	mg/L	NA	1. Basin Plan	<0.002	<0.002	<0.002	<0.002	0.003	0.004	<0.005	<0.005	<0.005	0.005	<0.005	<0.005
Arsenic	mg/L	NA	1. Basin Plan	<0.001	<0.001	0.002	0.003	0.003	0.004	0.003	0.004	0.003	0.003	0.004	<0.002
Cadmium	mg/L	NA	1. Basin Plan	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Chromium	mg/L	NA	1. Basin Plan	0.006	<0.005	<0.005	<0.005	0.008	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	mg/L	NA	1. Basin Plan	<0.006	<0.005	0.009	0.009	0.015	0.019	0.009	0.018	0.006	0.008	0.022	0.02
Lead	mg/L	NA		<0.002	<0.002	<0.002	0.005	0.005	0.005	0.002	0.006	<0.002	<0.002	0.002	0.005
Nickel	mg/L	NA	1. Basin Plan	0.002	0.002	0.004	0.004	0.004	0.006	0.004	0.003	<0.002	0.004	0.002	0.003
Selenium	mg/L	NA	16. 40 CFR 131.38	<0.002	<0.002	<0.002	<0.004	<0.004	<0.004	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	mg/L	NA	1. Basin Plan	<0.020	<0.020	0.028	0.022	0.046	0.066	0.033	0.065	<0.02	0.020	0.022	0.052
Dissolved Metals															
Antimony	mg/L	0.006	1. Basin Plan	<0.002	<0.002	<0.002	<0.002	0.002	0.002	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Arsenic	mg/L	0.34 (c)	16. 40 CFR 131.38	<0.001	<0.001	0.002	0.002	0.002	0.002	<0.002	0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	mg/L	(d)	16. 40 CFR 131.38	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Chromium	mg/L	(d)	16. 40 CFR 131.38	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	mg/L	(d)	16. 40 CFR 131.38	<0.005	0.012	0.005	<0.005	0.049	0.008	<0.005	0.005	<0.005	<0.005	0.007	<0.005
Lead	mg/L	(d)	16. 40 CFR 131.38	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Nickel	mg/L	(d)	16. 40 CFR 131.38	0.002	0.005	0.002	0.003	0.002	<0.002	0.002	0.002	0.002	0.003	0.002	<0.002
Selenium	mg/L	NA	16. 40 CFR 131.38	<0.002	<0.002	<0.002	<0.004	<0.004	<0.004	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	mg/L	(d)	16. 40 CFR 131.38	<0.020	<0.020	<0.020	<0.020	0.230	0.022	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Toxicity															
Ceriodaphnia 96-hr	NOEC (%)	100		25	100	100	100	100	100	100	100	100	100	100	100
Ceriodaphnia 7-day survival	NOEC (%)	100		25	50	100	100	100	100	100	100	100	100	100	100
Ceriodaphnia 7-day reproduction	NOEC (%)	100		25	100	100	100	100	100	100	100	100	100	100	100
Hyalella 96-hr	NOEC (%)	100		100	100	100	100	100	100	100	100	100	100	100	100
Selenastrum 96-hr	NOEC (%)	100		100	100	100	100	100	100	100	100	100	100	100	100

See last page for footnotes and source references.

Table D.3-4. Analytes Measured at the Escondido Creek Mass Loading Station.

Analyte	Units	Water Quality Benchmarks	Source	2005-2006			2006-2007			2007-2008		Frequency Above Benchmarks	Mean Ratio to Benchmarks
				10/17/05	2/19/06	3/11/06	10/14/06	1/31/07	2/19/07	11/30/07	2/3/08-2/4/08		
General / Physical / Organic													
Electrical Conductivity	umhos/cm	NA	2. CCR, 5. Goldbook	2550	1618	778	2400	1654	1086	496	1,759		
Oil And Grease	mg/L	10	1 Basin Plan, 3. Anacostia River TMDL, 4. MSGP 2000	<1	<1	<1	<5	<5	<5	3.1J	1.5J	0%	0.10
pH	pH scale	6.5-9.0	1. Basin Plan	7.80	6.70	7.69	7.50	8.01	6.97	7.57	8.38	0%	0.00
Water Temperature	Celcius			17.00	9.70	12.10	15.40	13.70	14.30	16.10	12.10		
Bacteriological													
Enterococci	MPN/100mL	NA	1. Basin Plan	80,000	5,000	90,000	80,000	5,000	110,000	130,000	3,000		
Fecal Coliform	MPN/100mL	400	1. Basin Plan REC-1/REC-2	80,000	17,000	17,000	23,000	2,800	4,000	110,000	1,100	100%	54.38
Total Coliform	MPN/100mL	NA	1. Basin Plan	130,000	300,000	170,000	130,000	14,000	170,000	800,000	22,000		
Wet Chemistry													
Ammonia As N	mg/L	(a)	6. U.S. EPA Water Quality Criteria (Freshwater)	0.95	0.23	<0.1	0.44	1.41	1.24	0.38	0.1	0%	0.04
Biological Oxygen Demand	mg/L	30	4. MSGP 2000, 8. McNeeley (1979)	7.62	4.54	7.29	14.5	33.1	8.8	9.1	5.5	10%	0.35
Chemical Oxygen Demand	mg/L	120	4. MSGP 2000	75	64	69	58	116	37	47	24	5%	0.47
Dissolved Organic Carbon	mg/L			5.66	18.2	5.56	76.9	27.3	10.7	13.1	6.9		
Dissolved Phosphorus	mg/L	2	4. MSGP 2000	0.42	0.36	0.26	0.35	0.35	0.28	0.51	0.33	0%	0.13
Nitrate As N	mg/L	10	1. Basin Plan	4.63	3.77	4.15	5.3	<0.05	2.38	1.6	1.6	0%	0.30
Nitrite As N	mg/L	1	1. Basin Plan	0.05	0.05	0.06	<0.05	0.1	0.05	0.08	0.03J	0%	0.04
Surfactants (MBAS)	mg/L	0.5	1. Basin Plan	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.28	0.107	0%	0.43
Total Dissolved Solids	mg/L	500 (b)	1. Basin Plan	1220	844	929	1590	715	748	448	364	90%	2.05
Total Kjeldahl Nitrogen	mg/L	NA		3	6.5	1.3	1.8	3	2.4	2.9	1.1		
Total Organic Carbon	mg/L			32.2	18.2	14.1	77.1	31.9	11	14.6	6.6		
Total Phosphorus	mg/L	2	4. MSGP 2000	0.44	0.39	0.5	0.4	0.52	0.4	0.63	0.46	0%	0.27
Total Suspended Solids	mg/L	100	4. MSGP 2000, 1. Basin Plan	102	36	155	97	103	65	160	46	35%	0.92
Turbidity	NTU	20	1. Basin Plan	30.9	39.3	137	57.5	52	62.3	126	75.3	85%	3.27
Pesticides													
Chlorpyrifos	µg/L	0.02	12. CA Dept. of Fish & Game, 2000	<0.01	<0.02	<0.02	<0.002	<0.002	<0.002	<0.002	<0.002	7%	0.28
Diazinon	µg/L	0.08	12. CA Dept. of Fish & Game, 2000, 11. Chollas Creek TMDL for Diazinon, 10. U.S. EPA, Aquatic Life Ambient Water Quality Criteria Diazinon	<0.01	0.045	<0.02	<0.004	<0.004	<0.004	0.015	0.007	25%	1.31
Malathion	µg/L	0.43	13. CA Dept. of Fish & Game, 1998, 5. Goldbook	0.052	<0.02	<0.02	0.032	<0.006	<0.006	0.136	0.038	0%	0.10
Hardness													
Total Hardness	mg CaCO3/L			668	447	502	772	331	329	95.7	87.6		
Total Metals													
Antimony	mg/L	NA	1. Basin Plan	<0.005	<0.005	<0.005	0.002	0.002	0.003	0.001	0.0007		
Arsenic	mg/L	NA	1. Basin Plan	0.004	0.002	0.005	0.01	<0.001	0.002	0.0023	0.0015		
Cadmium	mg/L	NA	1. Basin Plan	<0.001	0.002	0.009	0.003	<0.001	0.001	0.0003J	<0.0004		
Chromium	mg/L	NA	1. Basin Plan	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.0023	0.0011		
Copper	mg/L	NA	1. Basin Plan	0.012	0.009	0.01	0.008	0.014	0.026	0.015	0.0068		
Lead	mg/L	NA		0.004	<0.002	0.005	0.002	0.005	0.005	0.0067	0.0025		
Nickel	mg/L	NA	1. Basin Plan	0.004	0.003	0.004	0.004	0.004	0.005	0.0036	0.0014		
Selenium	mg/L	NA	16. 40 CFR 131.38	<0.005	<0.005	<0.005	<0.004	<0.004	<0.004	0.0006	0.0004J		
Zinc	mg/L	NA	1. Basin Plan	0.030	0.038	0.079	0.026	0.061	0.08	0.083	0.033		
Dissolved Metals													
Antimony	mg/L	0.006	1. Basin Plan	<0.005	<0.005	<0.005	<0.002	<0.002	0.002	0.0009	0.0008		
Arsenic	mg/L	0.34 (c)	16. 40 CFR 131.38	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.0017	0.0013	0%	0.00
Cadmium	mg/L	(d)	16. 40 CFR 131.38	<0.001	<0.001	0.001	<0.001	<0.001	<0.001	<0.0004	<0.0004	0%	0.03
Chromium	mg/L	(d)	16. 40 CFR 131.38	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.0005	0.0006	0%	0.00
Copper	mg/L	(d)	16. 40 CFR 131.38	0.005	0.007	<0.005	0.004	0.007	0.005	0.0048	0.0037	5%	0.18
Lead	mg/L	(d)	16. 40 CFR 131.38	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	0.00027	<0.0001	0%	0.00
Nickel	mg/L	(d)	16. 40 CFR 131.38	0.003	0.003	0.002	0.002	<0.002	<0.002	0.0014	0.0009	0%	0.00
Selenium	mg/L	NA	16. 40 CFR 131.38	<0.005	<0.005	<0.005	<0.004	<0.004	<0.004	0.0007	0.0004J	0%	0.09
Zinc	mg/L	(d)	16. 40 CFR 131.38	0.03	0.023	0.03	<0.02	<0.02	0.07	0.0134	0.0068	0%	0.08
Toxicity													
<i>Ceriodaphnia</i> 96-hr	NOEC (%)	100		100	100	100	100	100	100	100	100	5%	1.15
<i>Ceriodaphnia</i> 7-day survival	NOEC (%)	100		100	100	100	100	100	100	100	100	10%	1.20
<i>Ceriodaphnia</i> 7-day reproduction	NOEC (%)	100		100	100	100	100	100	100	100	100	5%	1.15
<i>Hyalella</i> 96-hr	NOEC (%)	100		100	100	100	100	100	100	12.5	50	10%	1.40
<i>Selenastrum</i> 96-hr	NOEC (%)	100		100	100	100	100	100	100	100	100	0%	1.00

See last page for footnotes and source references.

Table D.3-4. Analytes Measured at the Escondido Creek Mass Loading Station.

Blank spaces have been verified and no data is available due to changes in the monitoring program.

(a) Water Quality Benchmark is based on CMC (salmonids absent) using pH described in the U.S. EPA, 1999 Update of Ambient Water Quality Criteria for Ammonia, EPA-822-R-99-014, December 1999.

(b) Water Quality Benchmark for total dissolved solids is based on the San Diego Regional Water Quality Control Plan by watershed for the San Diego Region (Basin Plan), 1994 (with amendments effective prior to April 25, 2007).

(c) Water Quality Benchmark for dissolved metal fractions are based on a default water effects ratios (WER) value of 1 and are calculated as described by the USEPA Federal Register Doc. 40 CFR Part 131, May 18, 2000.

(d) Water Quality Benchmark for dissolved metal fractions are based on total hardness and are calculated as described by the USEPA Federal Register Doc. 40 CFR Part 131, May 18, 2000. The Criteria Maximum Concentration (CMC) was used. NA indicate no criteria or published value was available or applicable to the matrix or program.

Shaded text – exceeds water quality benchmark. Underlined results are above the **CMC** water quality benchmark.

* Indicates detection limit above water quality benchmark.

Sources

Please refer to the San Diego County Copermittee Regional Monitoring Program Benchmark Suorces for benchmark source citations.

Table D.4-1. Dry Weather Monitoring Results for San Dieguito River WMA, 2007-2008.

Analyte	Units	Water Quality Benchmarks	Source	San Dieguito River					
				MLS	TWAS-1	TWAS-2	MLS	TWAS-1	TWAS-2
				3/4/08-3/5/08	3/4/08-3/5/08	3/4/08-3/5/08	6/2/08-6/3/08	6/2/08-6/3/08	6/2/08-6/3/08
General/Physical/Organic									
Electrical Conductivity	umhos/cm		2. CCR, 5. Goldbook	2,740	2,650	1,902	3,760	2,360	3,000
Oil & Grease	mg/L	10	1 Basin Plan, 3. Anacostia River TMDL	<5	<5	1.2J	<5	<5	2.6J
pH	pH scale	6.5-9.0	1. Basin Plan	7.77	8.31	8.16	7.96	7.91	7.73
Water Temperature	Celcius			15.30	14.00	12.50	23.40	21.30	19.20
Bacteriological									
Enterococci	MPN/100mL	151 (a)	1. Basin Plan	110	230	170	471	130	7,000
Fecal Coliform	MPN/100mL	400	1. Basin Plan REC-1/REC-2	20	20	80	500	80	170
Total Coliform	MPN/100mL	NA	1. Basin Plan	500	500	2,200	1,700	3,000	30,000
Wet Chemistry									
Ammonia as N	mg/L	(b)	6. U.S. EPA Water Quality Criteria (Freshwater)	0.13	0.03	0.09	0.05	0.06	0.59
Biochemical Oxygen Demand	mg/L	10	8. McNeeley (1979)	<2	<2	65.1	10.2	2.4	66.4
Chemical Oxygen Demand	mg/L	120	4. MSGP 2000	19	16	22	28	26	33
Dissolved Organic Carbon	mg/L			8.2	7.1	16.5	7.9	8.8	15.2
Dissolved Phosphorus	mg/L	(c)	19. U.S. EPA Nutrient Numeric Endpoint Tool	0.09	0.09	0.1	0.05	0.12	0.07
Nitrate as N	mg/L	(c)	19. U.S. EPA Nutrient Numeric Endpoint Tool	1.48	0.85	2.25	0.11	0.12	0.05
Nitrite as N	mg/L	(c)	19. U.S. EPA Nutrient Numeric Endpoint Tool	<0.05	<0.05	<0.05	<0.05	0.05	0.07
Methylene Blue Active Substances	mg/L	0.5	1. Basin Plan	0.088	0.103	0.72	0.068	0.11	0.088
Total Dissolved Solids	mg/L	500 (d)	1. Basin Plan	2,266	1,752	1,330	2,160	1,476	1,940
Total Kjeldahl Nitrogen	mg/L	NA		7	1.3	1.7	0.98	1.3	2.4
Total Organic Carbon	mg/L			9.7	7.5	13.7	8.1	9.7	15.1
Total Phosphorus	mg/L	(c)	19. U.S. EPA Nutrient Numeric Endpoint Tool	0.134	0.118	0.452	0.081	0.162	0.279
Total Suspended Solids	mg/L	58	14. NSQD, 1. Basin Plan	7.6	3.3J	264	5	19.3	102.7
Turbidity	NTU	20	1. Basin Plan	8.1	3.2	102.8	3.5	9.2	105.2
Pesticides									
Chlorpyrifos	µg/L	0.02 (acute) / 0.014 (chronic)	12. CA Dept. of Fish & Game, 2000	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Diazinon	µg/L	0.08 acute and 0.05 chronic	12. CA Dept. of Fish & Game, 2000, 11. Chollas Creek TMDL for Diazinon, 10. U.S. EPA, Aquatic Life Ambient Water Quality Criteria Diazinon	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Malathion	µg/L	0.43 acute / 0.1 chronic	13. CA Dept. of Fish & Game, 1998, 5. Goldbook	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Hardness									
Hardness	mg CaCO3/L			332.1	508.1	348.9	560.3	452.9	525.3
Total Metals									
Antimony	mg/L	0.006	1. Basin Plan	0.0003J	0.0003J	0.0002J	0.0002J	0.0004J	0.0002J
Arsenic	mg/L	0.05	1. Basin Plan	0.0026	0.0024	0.0016	0.0027	0.0029	0.0021
Cadmium	mg/L	0.005	1. Basin Plan	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004
Chromium	mg/L	0.05	1. Basin Plan	0.0002J	0.0002J	0.0015	<0.0005	0.0002J	0.0013
Copper	mg/L	1.0	1. Basin Plan	0.0014	0.0020	0.0057	0.0005J	0.0025	0.0034
Lead	mg/L	NA		0.0001	0.0001	0.0060	0.0001	0.0002	0.0039
Nickel	mg/L	0.1	1. Basin Plan	0.0018	0.0013	0.0019	0.0021	0.0016	0.0021
Selenium	mg/L	0.005	16. 40 CFR 131.38	0.0008	0.0014	0.0004J	0.0004J	0.0008	0.0003J

Table D.4-1. Dry Weather Monitoring Results for San Dieguito River WMA, 2007-2008.

Analyte	Units	Water Quality Benchmarks	Source	San Dieguito River					
				MLS	TWAS-1	TWAS-2	MLS	TWAS-1	TWAS-2
				3/4/08-3/5/08	3/4/08-3/5/08	3/4/08-3/5/08	6/2/08-6/3/08	6/2/08-6/3/08	6/2/08-6/3/08
Zinc	mg/L	5.0	1. Basin Plan	0.0033	0.0041	0.0145	0.0010	0.0054	0.0062
Dissolved Metals									
Antimony	mg/L	0.006	1. Basin Plan	0.0003J	0.0003J	0.0002J	0.0002J	0.0004J	0.0002J
Arsenic	mg/L	0.34 (acute) and 0.15 (chronic)	16. 40 CFR 131.38	0.0022	0.0024	0.0010	0.0027	0.0025	0.0018
Cadmium	mg/L	(e)	16. 40 CFR 131.38	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004
Chromium	mg/L	(e)	16. 40 CFR 131.38	0.0001J	0.0001J	0.0001J	<0.0005	0.0001J	0.0001J
Copper	mg/L	(e)	16. 40 CFR 131.38	0.0012	0.0019	0.0009	0.0006J	0.0016	0.0009
Lead	mg/L	(e)	16. 40 CFR 131.38	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Nickel	mg/L	(e)	16. 40 CFR 131.38	0.0018	0.0013	0.0009	0.0021	0.0014	0.0012
Selenium	mg/L	NA	16. 40 CFR 131.38	0.0007	0.0015	0.0003J	0.0004J	0.0007	0.0003J
Zinc	mg/L	(e)	16. 40 CFR 131.38	0.0008	0.0023	0.0003J	0.0005	0.0018	0.0004J
Toxicity									
<i>Ceriodaphnia</i> 96-hr	NOEC (%)	100		100	100	100	100	100	100
<i>Ceriodaphnia</i> 7-day survival	NOEC (%)	100		100	100	100	100	100	100
<i>Ceriodaphnia</i> 7-day reproduction	NOEC (%)	100		100	100	100	100	<6.25	100
<i>Hyalella</i> 96-hr	NOEC (%)	100		100	100	100	100	100	100
<i>Selenastrum</i> 96-hr	NOEC (%)	100		100	100	100	50	100	100

- (a) Water Quality Benchmark for Enterococi are based on the maximum criteria for infrequently used freshwater area by the San Diego Regional Water Quality Control Plan for the San Diego Region (Basin Plan), 1994 (with amendments effective prior to April 25, 2007).
- (b) Water Quality Benchmark is based on CMC (salmonids absent) and CCC (early life stages present) using water temperature and pH described in the U.S. EPA, 1999 Update of Ambient Water Quality Criteria for Ammonia, EPA-822-R-99-014, December 1999.
- (c) Nutrient analytes for ambient conditions are assessed based on a weight of evidence approach using the EPA's Nutrient Numeric Endpoint Tool to determine if beneficial uses have potential for impairment.
- (d) Water Quality Benchmark for total dissolved solids is based on the San Diego Regional Water Quality Control Plan by watershed for the San Diego Region (Basin Plan), 1994 (with amendments effective prior to April 25, 2007).
- (e) Water Quality Benchmark for dissolved metal fractions are based on total hardness and are calculated as described by the USEPA Federal Register Doc. 40 CFR Part 131, May 18, 2000.
- NA indicate no criteria or published value was available or applicable to the matrix or program.

Shaded text – exceeds water quality benchmarks.

* Indicates detection limit exceeds water quality Benchmark.

**Indicates no water at sampling time.

Sources

Please refer to the San Diego County Copermittee Regional Monitoring Program Benchmark Sources for benchmark source citations.

Table D.4-2. Wet Weather Monitoring Results for San Dieguito River WMA, 2007-2008.

Analyte	Units	Water Quality Benchmarks	Source	San Dieguito River					
				MLS	TWAS-1	TWAS-2	MLS	TWAS-1	TWAS-2
				11/30/07	11/30/07	11/30/07-12/1/07	2/3/08-2/4/08	2/3/08	2/3/08
General/Physical/Organic									
Electrical Conductivity	umhos/cm		2. CCR, 5. Goldbook	3,720	387	1,382	2,740	199.9	811
Oil & Grease	mg/L	10	1. Basin Plan, 3. Anacostia River TMDL, 4. MSGP 2000	1.9J	2.8J	1.8J	2.3J	1.7J	5.4
pH	pH scale	6.5-9.0	1. Basin Plan	7.90	7.77	9.64	7.75	7.88	8.80
Water Temperature	Celcius				17.90	14.50	13.00	11.90	11.10
Bacteriological									
Enterococci	MPN/100mL	NA	1. Basin Plan	8,000	3,000	170,000	2,300	230	17,000
Fecal Coliform	MPN/100mL	400	1. Basin Plan REC-1/REC-2	2,200	3,000	220,000	80	20	13,000
Total Coliform	MPN/100mL	NA	1. Basin Plan	17,000	17,000	9,000,000	5,000	500	17,000
Wet Chemistry									
Ammonia as N	mg/L	(a)	6. U.S. EPA Water Quality Criteria (Freshwater)	0.26	0.68	8.3	0.07	0.12	0.71
Biochemical Oxygen Demand	mg/L	30	4. MSGP 2000, 8. McNeeley (1979)	11	14	110	2.7	2.6	64.4
Chemical Oxygen Demand	mg/L	120	4. MSGP 2000	70	49	70	29	24	140
Dissolved Organic Carbon	mg/L			11.6	12.9	58	8.4	6.3	11.8
Dissolved Phosphorus	mg/L	2	4. MSGP 2000	0.28	0.44	0.83	0.08	0.28	0.67
Nitrate as N	mg/L	10	1. Basin Plan	0.7	0.9	3.6	0.33	0.57	0.93
Nitrite as N	mg/L	1	1. Basin Plan	0.08	0.08	1.1	<0.05	0.03J	0.03J
Methylene Blue Active Substances	mg/L	0.5	1. Basin Plan	0.14	0.14	8.25	0.072	0.075	0.28
Total Dissolved Solids	mg/L	500 (b)	1. Basin Plan	2,034	378	1,304	1,528	704	394
Total Kjeldahl Nitrogen	mg/L			1.8	3.4	23	1.3	0.98	17
Total Organic Carbon	mg/L			12.8	13.6	90.7	7.4	6.3	18.4
Total Phosphorus	mg/L	2	4. MSGP 2000	0.35	1.1	13	0.15	0.36	4
Total Suspended Solids	mg/L	100	4. MSGP 2000, 1. Basin Plan	28	730	7,100	7.3	80	2,030
Turbidity	NTU	20	1. Basin Plan	28	292	8,338	8	43	164
Pesticides									
Chlorpyrifos	µg/L	0.02 (acute) / 0.014 (chronic)	12. CA Dept. of Fish & Game, 2000	<0.002	0.25	<0.002	<0.002	0.025	<0.002
Diazinon	µg/L	0.08 acute and 0.05 chronic	12. CA Dept. of Fish & Game, 2000, 11. Chollas Creek TMDL for Diazinon, 10. U.S. EPA, Aquatic Life Ambient Water Quality Criteria Diazinon	<0.004	0.025	<0.004	<0.004	0.006	<0.004
Malathion	µg/L	0.43	13. CA Dept. of Fish & Game, 1998, 5. Goldbook	0.029	0.244	<0.006	<0.006	0.002	<0.006
Hardness									
Hardness	mg CaCO3/L			510.1	121	255.8	358.9	183.3	106.9
Total Metals									
Antimony	mg/L	NA	1. Basin Plan	0.0003J	0.0011	0.0004J	0.0004J	0.0006	0.0002J
Arsenic	mg/L	NA	1. Basin Plan	0.0048	0.0035	0.0112	0.0029	0.0023	0.0042
Cadmium	mg/L	NA	1. Basin Plan	<0.0004	<0.0004	0.0046	<0.0004	<0.0004	0.0007
Chromium	mg/L	NA	1. Basin Plan	0.0006	0.0048	0.0377	<0.0002	0.0010	0.0046
Copper	mg/L	NA	1. Basin Plan	0.0059	0.0230	0.1289	0.0018	0.0066	0.0304
Lead	mg/L	NA		0.0006	0.0102	0.3442	0.0003	0.0015	0.0744
Nickel	mg/L	NA	1. Basin Plan	0.0026	0.0063	0.0669	0.0020	0.0015	0.0104
Selenium	mg/L	NA	16. 40 CFR 131.38	0.0003J	0.0005	0.0030	0.0007	0.0008	0.0004J
Zinc	mg/L	NA	1. Basin Plan	0.0175	0.1252	0.5719	0.0031	0.0241	0.1323

Table D.4-2. Wet Weather Monitoring Results for San Dieguito River WMA, 2007-2008.

Analyte	Units	Water Quality Benchmarks	Source	San Dieguito River					
				MLS	TWAS-1	TWAS-2	MLS	TWAS-1	TWAS-2
				11/30/07	11/30/07	11/30/07-12/1/07	2/3/08-2/4/08	2/3/08	2/3/08
Dissolved Metals									
Antimony	mg/L	0.0060	1. Basin Plan	0.0002J	0.0011	0.0019	0.0004J	0.0005	0.0003J
Arsenic	mg/L	0.34 (c)	16. 40 CFR 131.38	0.0038	0.0023	0.0023	0.0028	0.0023	0.0013
Cadmium	mg/L	(d)	16. 40 CFR 131.38	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004
Chromium	mg/L	(d)	16. 40 CFR 131.38	0.0001J	0.0005	0.0002J	0.0001J	0.0005	0.0001J
Copper	mg/L	(d)	16. 40 CFR 131.38	0.0023	0.0042	0.0050	0.0016	0.0035	0.0021
Lead	mg/L	(d)	16. 40 CFR 131.38	0.00008J	0.0003	0.0001	<0.0001	<0.0001	<0.0001
Nickel	mg/L	(d)	16. 40 CFR 131.38	0.0022	0.0015	0.0028	0.0021	0.0010	0.0005
Selenium	mg/L	NA	16. 40 CFR 131.38	0.0003J	0.0005	0.0014	0.0008	0.0008	0.0003J
Zinc	mg/L	(d)	16. 40 CFR 131.38	0.0046	0.0118	0.0028	0.0008	0.0056	0.0007
Toxicity									
<i>Ceriodaphnia</i> 96-hr	NOEC (%)	100		100	100	100	100	100	100
<i>Ceriodaphnia</i> 7-day survival	NOEC (%)	100		100	100	100	100	100	100
<i>Ceriodaphnia</i> 7-day reproduction	NOEC (%)	100		50	100	12.5*	100	100	100
<i>Hyalella</i> 96-hr	NOEC (%)	100		25	50	100	100	50	100
<i>Selenastrum</i> 96-hr	NOEC (%)	100		100	100	100	100	100	100

(a) Water Quality Benchmark is based on CMC (salmonids absent) using pH described in the U.S. EPA, 1999 Update of Ambient Water Quality Criteria for Ammonia, EPA-822-R-99-014, December 1999.

(b) Water Quality Benchmark for total dissolved solids is based on the San Diego Regional Water Quality Control Plan by watershed for the San Diego Region (Basin Plan), 1994 (with amendments effective prior to April 25, 2007).

(c) Water Quality Benchmark for dissolved metal fractions are based on a default water effects ratios (WER) value of 1 and are calculated as described by the USEPA Federal Register Doc. 40 CFR Part 131, May 18, 2000.

(d) Water Quality Benchmark for dissolved metal fractions are based on total hardness and are calculated as described by the USEPA Federal Register Doc. 40 CFR Part 131, May 18, 2000. The Criteria Maximum Concentration (CMC) was used.

NA indicate no criteria or published value was available or applicable to the matrix or program.

*For SDC-TWAS-2 on 11/30/07-12/1/07, the *C. dubia* 7-day reproduction endpoint test was inconclusive due to the high particulate content from fire related impacts to this portion of the watershed. The sample required dilution to a 12.5% solution to run the test and no toxicity was observed in this diluted sample. No inference can be made to the 100% solution.

Shaded text – exceeds water quality benchmarks.

Sources

Please refer to the San Diego County Copermittee Regional Monitoring Program Benchmark Sources for benchmark source citations.

Table D.4-3. San Dieguito River Additional Fire Assessment Analyses.

Analyte	Units	2007-2008		
		SDC-MLS	SDC-TWAS-1	TWAS-2
		11/30/2007	11/30/2007	12/1/07
PAHs				
1-Methylnaphthalene	ng/L	2.9 J	12.7	925.4
1-Methylphenanthrene	ng/L	1.5 J	30.7	129.6
2,3,5-Trimethylnaphthalene	ng/L	<5	2.7 J	982.8
2,6-Dimethylnaphthalene	ng/L	<5	11.9	541.8
2-Methylnaphthalene	ng/L	1.8 J	20.2	1243.3
Acenaphthene	ng/L	<5	5.7	114.5
Acenaphthylene	ng/L	1.2 J	15.5	172.9
Anthracene	ng/L	<5	12.3	121.1
Benz[a]anthracene	ng/L	1.1 J	17.3	71.9
Benzo[a]pyrene	ng/L	2.2 J	17.6	73.1
Benzo[b]fluoranthene	ng/L	1.7 J	21.5	64.8
Benzo[e]pyrene	ng/L	1.9 J	25.4	78.6
Benzo[g,h,i]perylene	ng/L	7.1	28.3	72.7
Benzo[k]fluoranthene	ng/L	<5	26.7	81.6
Biphenyl	ng/L	2.3 J	33	2157
Chrysene	ng/L	5.6	43.1	137.9
Dibenz[a,h]anthracene	ng/L	<5	1.3 J	13.7
Dibenzothiophene	ng/L	1.6 J	18.4	50.4
Fluoranthene	ng/L	5.5	71.8	254.8
Fluorene	ng/L	2.7 J	13.9	342.7
Indeno[1,2,3-c,d]pyrene	ng/L	<5	17.3	80.5
Naphthalene	ng/L	7.8	57.8	3920.1
Perylene	ng/L	<5	10.9	18.6
Phenanthrene	ng/L	8.2	72.7	842.5
Pyrene	ng/L	7	77.2	231.7
Sulfate				
Sulfate	mg/L	416.3	64.3	333.9
Mercury				
Mercury (Hg) (total)	µg/L	<0.02	<0.02	0.14
Mercury (Hg) (dissolved)	µg/L	<0.02	<0.02	0.03

Table D.4-4. Analytes Measured at the San Dieguito River Mass Loading Station.

Analyte	Units	Water Quality Benchmarks	Source	2001-2002			2002-2003			2003-2004			2004-2005		
				11/29/01	1/29/02	2/17/02	2/11/03	2/25/03	3/15/03	2/3/04	2/18/04	3/2/04	10/17/04	2/11/05	2/18/05
General / Physical / Organic															
Electrical Conductivity	umhos/cm	NA	2. CCR, 5. Goldbook	3090	3340	3480	277	2700	257	3700	3660	1990	3210	3380	1744
Oil And Grease	mg/L	10	1 Basin Plan, 3. Anacostia River TMDL, 4. MSGP 2000	<1	<1	<1	<1	<1	1.38	<1	<1	<1	<1	<1	<1
pH	pH scale	6.5-9.0	1. Basin Plan	7.6	7.5	7.5	7.83	7.56	7.64	8.00	5.22	7.21	7.82	7.70	6.84
Water Temperature	Celcius						15	14.3	13.7	13.40	12.8	13.50	19.90	13.10	14.40
Bacteriological															
Enterococci	MPN/100mL	NA	1. Basin Plan	3,000	300	500	17,000	5,000	1,700	7,000	1,300	30,000	140,000	130	1,300
Fecal Coliform	MPN/100mL	400	1. Basin Plan REC-1/REC-2	230	80	22	5,000	300	700	230	1300	8000	14,000	230	500
Total Coliform	MPN/100mL	NA	1. Basin Plan	230	1,300	170	50,000	3,000	13,000	500	3,000	130,000	300,000	800	3,000
Wet Chemistry															
Ammonia As N	mg/L	(a)	6. U.S. EPA Water Quality Criteria (Freshwater)	0.2	0.13	<0.1	0.52	0.20	0.13	<0.1	0.17	1.7	<0.1	0.17	0.16
Biological Oxygen Demand	mg/L	30	4. MSGP 2000, 8. McNeeley (1979)	14	3	2.1	15.9	2.51	3.89	44.7	7.46	4.37	21.8	3.33	<2
Chemical Oxygen Demand	mg/L	120	4. MSGP 2000	34	61	60	51	41	82	138	57	81	<25	123	41
Dissolved Organic Carbon	mg/L						7.98	10.4	7.67	5.74	61	9.19	35.9	5.42	5.21
Dissolved Phosphorus	mg/L	2	4. MSGP 2000	0.1	0.05	<0.05	0.11	0.08	<0.05	<0.05	0.2	0.19	0.16	0.13	0.12
Nitrate As N	mg/L	10	1. Basin Plan	0.1	0.2	0.2	0.06	0.40	0.27	0.05	0.13	1.01	0.16	1.67	1.81
Nitrite As N	mg/L	1	1. Basin Plan	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Surfactants (MBAS)	mg/L	0.5	1. Basin Plan	<0.5	<0.5	<0.5	<0.1	0.1	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Total Dissolved Solids	mg/L	500 (b)	1. Basin Plan	1750	1940	2080	1900	1440	1490	2220	2580	1350	2100	1630	982
Total Kjeldahl Nitrogen	mg/L	NA		2.4	1.35	1.4	0.8	1.4	0.9	0.8	2.8	1.8	1.4	1.6	2
Total Organic Carbon	mg/L						9.68	8.59	11.0	9.85	83.8	11.2	36.3	9.54	10.9
Total Phosphorus	mg/L	2	4. MSGP 2000	0.1	0.07	0.08	0.14	0.08	0.12	0.12	0.2	0.3	0.19	0.14	0.45
Total Suspended Solids	mg/L	100	4. MSGP 2000, 1. Basin Plan	31	<20	<20	10	23	34	<20	44	101	28	24	28
Turbidity	NTU	20	1. Basin Plan	17.6	3.69	3.12	4.72	17.5	17.7	30.6	19.3	29.7	6.77	6.01	18.3
Pesticides															
Chlorpyrifos	µg/L	0.02	12. CA Dept. of Fish & Game, 2000	<0.03*	<0.03*	<0.03*	<0.03*	<0.03*	<0.03*	<0.03*	<0.01	<0.01	<0.01	<0.01	<0.01
Diazinon	µg/L	0.08	12. CA Dept. of Fish & Game, 2000, 11. Chollas Creek TMDL for Diazinon, 10. U.S. EPA, Aquatic Life Ambient Water Quality Criteria Diazinon	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.01	<0.01	0.032	<0.01	<0.01
Malathion	µg/L	0.43	13. CA Dept. of Fish & Game, 1998, 5. Goldbook				<0.10	<0.10	<0.10	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Hardness															
Total Hardness	mg CaCO3/L			840	970	1080	1030	726	767	935	999	564	967	767	487
Total Metals															
Antimony	mg/L	NA	1. Basin Plan	<0.002	<0.002	<0.002	0.002	0.003	<0.002	<0.005	<0.006	<0.005	<0.005	<0.005	<0.005
Arsenic	mg/L	NA	1. Basin Plan	0.001	0.002	0.003	0.002	0.003	0.003	0.007	0.006	0.004	0.006	0.007	<0.002
Cadmium	mg/L	NA	1. Basin Plan	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Chromium	mg/L	NA	1. Basin Plan	0.005	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	mg/L	NA	1. Basin Plan	<0.005	<0.005	<0.005	0.014	0.004	<0.005	0.012	0.006	0.005	0.005	<0.005	<0.005
Lead	mg/L	NA		<0.002	<0.002	<0.002	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.002	<0.002	<0.002
Nickel	mg/L	NA	1. Basin Plan	0.002	0.002	0.003	0.002	<0.002	0.003	0.003	<0.002	<0.002	0.003	0.003	0.002
Selenium	mg/L	NA	16. 40 CFR 131.38	<0.002	<0.002	0.007	<0.004	<0.004	<0.004	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	mg/L	NA	1. Basin Plan	<0.020	<0.020	<0.020	<0.020	0.008	0.005	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Dissolved Metals															
Antimony	mg/L	0.006	1. Basin Plan	<0.002	<0.002	<0.002	<0.002	0.002	0.003	<0.005	<0.006	<0.005	<0.005	<0.005	<0.005
Arsenic	mg/L	0.34 (c)	16. 40 CFR 131.38	0.001	0.002	0.001	0.002	0.002	0.002	0.003	0.004	<0.002	<0.002	<0.002	<0.002
Cadmium	mg/L	(d)	16. 40 CFR 131.38	<0.001	<0.001	<0.001	0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Chromium	mg/L	(d)	16. 40 CFR 131.38	<0.005	<0.005	0.007	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	mg/L	(d)	16. 40 CFR 131.38	<0.005	<0.005	<0.005	0.016	0.005	0.005	0.005	0.005	<0.005	<0.005	<0.005	<0.005
Lead	mg/L	(d)	16. 40 CFR 131.38	<0.002	<0.002	<0.002	<0.002	<0.002	0.0007	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Nickel	mg/L	(d)	16. 40 CFR 131.38	<0.002	0.003	0.005	0.002	<0.002	0.009	0.003	0.002	0.007	0.003	0.003	0.002
Selenium	mg/L	NA	16. 40 CFR 131.38	<0.002	<0.002	<0.002	<0.004	<0.004	<0.004	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	mg/L	(d)	16. 40 CFR 131.38	<0.020	<0.020	<0.020	0.086	0.033	<0.020	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Toxicity															
<i>Ceriodaphnia</i> 96-hr	NOEC (%)	100		100	100	100	100	100	100	100	100	100	100	100	100
<i>Ceriodaphnia</i> 7-day survival	NOEC (%)	100		100	100	100	100	100	100	100	100	100	100	100	100
<i>Ceriodaphnia</i> 7-day reproduction	NOEC (%)	100		6.25	100	50	12.5	100	50	100	100	100	25	100	100
<i>Hyalella</i> 96-hr	NOEC (%)	100		100	100	100	100	100	100	100	100	100	100	100	100
<i>Selenastrum</i> 96-hr	NOEC (%)	100		100	50	50	100	100	100	100	50	100	100	100	100

See last page for footnotes and source references.

Table D.4-4. Analytes Measured at the San Dieguito River Mass Loading Station.

Analyte	Units	Water Quality Benchmarks	Source	2005-2006			2006-2007			2007-2008		Frequency Above Benchmarks	Mean Ratio to Benchmarks
				10/18/05	1/2/06	2/20/06	12/10/06	1/31/07	2/20/07	11/30/07	2/3/08-2/4/08		
General / Physical / Organic													
Electrical Conductivity	umhos/cm	NA	2. CCR, 5. Goldbook	3790	4250	3710	3650	3470	3080	3,720	2,740		
Oil And Grease	mg/L	10	1 Basin Plan, 3. Anacostia River TMDL, 4. MSGP 2000	<1	<1	<1	<5	<5	<5	1.9J	2.3J	0%	0.10
pH	pH scale	6.5-9.0	1. Basin Plan	7.17	8.45	6.60	7.46	8.04	7.53	7.90	7.75	5%	0.06
Water Temperature	Celcius			17.90	15.30	11.90	16.40	11.90	16.20		13.00		
Bacteriological													
Enterococci	MPN/100mL	NA	1. Basin Plan	8,000	5,000	230	1,300	110	13,000	8,000	2,300		
Fecal Coliform	MPN/100mL	400	1. Basin Plan REC-1/REC-2	1,300	1,300	230	130	20	800	2,200	80	50%	4.58
Total Coliform	MPN/100mL	NA	1. Basin Plan	2,300	3,000	500	1,300	500	3,000	17,000	5,000		
Wet Chemistry													
Ammonia As N	mg/L	(a)	6. U.S. EPA Water Quality Criteria (Freshwater)	0.12	<0.1	0.39	0.45	0.12	0.92	0.26	0.07	0%	0.02
Biological Oxygen Demand	mg/L	30	4. MSGP 2000, 8. McNeeley (1979)	4.39	4.16	<2	2.18	3.89	7.07	11	2.7	5%	0.27
Chemical Oxygen Demand	mg/L	120	4. MSGP 2000	38	41	104	99	76	46	70	29	10%	0.54
Dissolved Organic Carbon	mg/L			5.53	14	9.66	10.5	9.56	10.3	11.6	8.4		
Dissolved Phosphorus	mg/L	2	4. MSGP 2000	0.4	0.09	0.2	<0.05	0.05	<0.05	0.28	0.08	0%	0.06
Nitrate As N	mg/L	10	1. Basin Plan	0.18	0.07	0.45	<0.05	<0.05	0.11	0.7	0.33	0%	0.04
Nitrite As N	mg/L	1	1. Basin Plan	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.08	<0.05	0%	0.03
Surfactants (MBAS)	mg/L	0.5	1. Basin Plan	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.14	0.072	0%	0.42
Total Dissolved Solids	mg/L	500 (b)	1. Basin Plan	2020	2090	1950	2180	2340	1840	2,034	1,528	100%	3.74
Total Kjeldahl Nitrogen	mg/L	NA		2.9	1.9	4.1	2.5	2.9	4.5	1.8	1.3		
Total Organic Carbon	mg/L			13.7	3.83	13.6	13.8	10.9	10.8	12.8	7.4		
Total Phosphorus	mg/L	2	4. MSGP 2000	0.52	0.16	0.3	0.43	0.16	0.18	0.35	0.15	0%	0.11
Total Suspended Solids	mg/L	100	4. MSGP 2000, 1. Basin Plan	<20	26	174	156	141	39	28	7.3	20%	0.47
Turbidity	NTU	20	1. Basin Plan	3.02	7.89	39.2	10.2	18.7	36.1	28	8	25%	0.82
Pesticides													
Chlorpyrifos	µg/L	0.02	12. CA Dept. of Fish & Game, 2000	<0.01	<0.02	<0.02	<0.002	<0.002	<0.002	<0.002	<0.002	0%	0.20
Diazinon	µg/L	0.08	12. CA Dept. of Fish & Game, 2000, 11. Chollas Creek TMDL for Diazinon, 10. U.S. EPA, Aquatic Life Ambient Water Quality Criteria Diazinon	<0.01	<0.02	<0.02	<0.004	<0.004	<0.004	<0.004	<0.004	0%	0.11
Malathion	µg/L	0.43	13. CA Dept. of Fish & Game, 1998, 5. Goldbook	<0.01	<0.02	<0.02	<0.006	<0.006	<0.006	0.029	<0.006	0%	0.03
Hardness													
Total Hardness	mg CaCO3/L			1030	1090	1080	1190	1210	985	510.1	358.9		
Total Metals													
Antimony	mg/L	NA	1. Basin Plan	<0.005	<0.005	<0.005	<0.002	<0.002	0.002	0.0003J	0.0004J		
Arsenic	mg/L	NA	1. Basin Plan	0.009	0.005	0.005	<0.001	<0.001	0.003	0.0048	0.0029		
Cadmium	mg/L	NA	1. Basin Plan	<0.001	<0.001	0.003	0.007	<0.001	<0.001	<0.0004	<0.0004		
Chromium	mg/L	NA	1. Basin Plan	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.0006	<0.0002		
Copper	mg/L	NA	1. Basin Plan	<0.005	<0.005	<0.005	0.006	0.007	0.012	0.0059	0.0018		
Lead	mg/L	NA		<0.002	<0.002	<0.002	0.002	0.002	0.002	0.00062	0.00025		
Nickel	mg/L	NA	1. Basin Plan	0.003	0.003	0.003	0.005	0.005	0.006	0.0026	0.002		
Selenium	mg/L	NA	16. 40 CFR 131.38	<0.005	<0.004	<0.005	<0.004	0.005	<0.004	0.0003J	0.0007		
Zinc	mg/L	NA	1. Basin Plan	0.034	<0.02	0.026	0.028	<0.02	0.101	0.018	0.0031		
Dissolved Metals													
Antimony	mg/L	0.006	1. Basin Plan	<0.005	<0.005	<0.005	<0.002	<0.002	0.002	0.0002J	0.0004J		
Arsenic	mg/L	0.34 (c)	16. 40 CFR 131.38	0.003	<0.001	<0.001	<0.001	<0.001	<0.001	0.0038	0.0028	0%	0.00
Cadmium	mg/L	(d)	16. 40 CFR 131.38	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0004	<0.0004	0%	0.03
Chromium	mg/L	(d)	16. 40 CFR 131.38	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.0001J	0.0001J	0%	0.00
Copper	mg/L	(d)	16. 40 CFR 131.38	<0.005	<0.005	<0.005	<0.002	0.003	0.003	0.0023	0.0016	0%	0.07
Lead	mg/L	(d)	16. 40 CFR 131.38	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	0.00008J	<0.0001	0%	0.00
Nickel	mg/L	(d)	16. 40 CFR 131.38	<0.002	0.003	0.003	0.003	0.003	0.002	0.0022	0.0021	0%	0.00
Selenium	mg/L	NA	16. 40 CFR 131.38	<0.005	<0.004	<0.005	<0.004	<0.004	<0.004	0.0003J	0.0008	0%	0.01
Zinc	mg/L	(d)	16. 40 CFR 131.38	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.0046	0.0008	0%	0.04
Toxicity													
<i>Ceriodaphnia</i> 96-hr	NOEC (%)	100		100	100	100	100	12.5	100	100	100	5%	1.35
<i>Ceriodaphnia</i> 7-day survival	NOEC (%)	100		100	50	100	100	12.5	100	100	100	10%	1.40
<i>Ceriodaphnia</i> 7-day reproduction	NOEC (%)	100		100	50	100	50	12.5	100	50	100	45%	2.85
<i>Hyalella</i> 96-hr	NOEC (%)	100		100	100	100	100	100	100	25	100	5%	1.15
<i>Selenastrum</i> 96-hr	NOEC (%)	100		100	50	<6.25	50	100	100	100	100	30%	2.00

See last page for footnotes and source references.

Table D.4-4. Analytes Measured at the San Dieguito River Mass Loading Station.

Blank spaces have been verified and no data is available due to changes in the monitoring program.

(a) Water Quality Benchmark is based on CMC (salmonids absent) using pH described in the U.S. EPA, 1999 Update of Ambient Water Quality Criteria for Ammonia, EPA-822-R-99-014, December 1999.

(b) Water Quality Benchmark for total dissolved solids is based on the San Diego Regional Water Quality Control Plan by watershed for the San Diego Region (Basin Plan), 1994 (with amendments effective prior to April 25, 2007).

(c) Water Quality Benchmark for dissolved metal fractions are based on a default water effects ratios (WER) value of 1 and are calculated as described by the USEPA Federal Register Doc. 40 CFR Part 131, May 18, 2000.

(d) Water Quality Benchmark for dissolved metal fractions are based on total hardness and are calculated as described by the USEPA Federal Register Doc. 40 CFR Part 131, May 18, 2000. The Criteria Maximum Concentration (CMC) was used. NA indicate no criteria or published value was available or applicable to the matrix or program.

Shaded text – exceeds water quality benchmark. Underlined results are above the **CMC** water quality benchmark.

* Indicates detection limit above water quality benchmark.

Sources

Please refer to the San Diego County Copermittee Regional Monitoring Program Benchmark Sources for benchmark source citations.

Table D.5-1. Dry Weather Monitoring Results for Los Peñasquitos Creek WMA, 2007-2008.

Analyte	Units	Water Quality Benchmarks	Source	Los Peñasquitos Creek					
				MLS	TWAS-1	TWAS-2	MLS	TWAS-1	TWAS-2
				9/26/07-9/27/07	9/26/07-9/27/07	9/26/07-9/27/07	6/2/08-6/3/08	6/2/08-6/3/08	6/2/08-6/3/08
General/Physical/Organic									
Electrical Conductivity	umhos/cm		2. CCR, 5. Goldbook	3,500	2,420	3,430	3,200	3,920	3,070
Oil & Grease	mg/L	10	1 Basin Plan, 3. Anacostia River TMDL	<1.1	1J	<2.2	<5	<5	1.5J
pH	pH scale	6.5-9.0	1. Basin Plan	8.07	8	7.6	8.1	8.28	7.68
Water Temperature	Celcius			17.7	19.8	19	19.1	27.4	19.4
Bacteriological									
Enterococci	MPN/100mL	151 (a)	1. Basin Plan	300	500	700	170	500	800
Fecal Coliform	MPN/100mL	400	1. Basin Plan REC-1/REC-2	20	220	300	80	230	170
Total Coliform	MPN/100mL	NA	1. Basin Plan	2,200	6,000	2,300	1,879	1,300	17,000
Wet Chemistry									
Ammonia as N	mg/L	(b)	6. U.S. EPA Water Quality Criteria (Freshwater)	0.01J	0.02J	<0.05	0.03	<0.03	0.04
Biochemical Oxygen Demand	mg/L	10	8. McNeeley (1979)	<2	<2	<2	<2	<2	<2
Chemical Oxygen Demand	mg/L	120	4. MSGP 2000	45	23	41	13	14	27
Dissolved Organic Carbon	mg/L			13.6	6.8	11.8	9.9	5.3	8.5
Dissolved Phosphorus	mg/L	(c)	19. U.S. EPA Nutrient Numeric Endpoint Tool	0.04J	<0.05	0.062	0.03J	0.09	0.09
Nitrate as N	mg/L	(c)	19. U.S. EPA Nutrient Numeric Endpoint Tool	<0.05	<0.05	0.255	<0.03	<0.03	0.2
Nitrite as N	mg/L	(c)	19. U.S. EPA Nutrient Numeric Endpoint Tool	<0.05	<0.05	0.01J	0.05	0.04J	0.05
Methylene Blue Active Substances	mg/L	0.5	1. Basin Plan	0.149	0.084	0.11	0.11	0.097	0.083
Total Dissolved Solids	mg/L	500 (d)	1. Basin Plan	2,057	2,446	1,942	1,798	2,638	1,802
Total Kjeldahl Nitrogen	mg/L	NA		1.1	0.98	1.4	0.84	0.56	0.98
Total Organic Carbon	mg/L			13.2	7.1	12	9.5	5.4	8.1
Total Phosphorus	mg/L	(c)	19. U.S. EPA Nutrient Numeric Endpoint Tool	0.066	<0.05	0.10	0.092	0.034J	0.13
Total Suspended Solids	mg/L	58	14. NSQD, 1. Basin Plan	5.3	1J	1.3J	8	1.7J	9.7
Turbidity	NTU	20	1. Basin Plan	3.25	2.23	4.4	5	2.3	6
Pesticides									
Chlorpyrifos	µg/L	0.02 (acute) / 0.014 (chronic)	12. CA Dept. of Fish & Game, 2000	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Diazinon	µg/L	0.08 acute and 0.05 chronic	12. CA Dept. of Fish & Game, 2000, 11. Chollas Creek TMDL for Diazinon, 10. U.S. EPA, Aquatic Life Ambient Water Quality Criteria Diazinon	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Malathion	µg/L	0.43 acute / 0.1 chronic	13. CA Dept. of Fish & Game, 1998, 5. Goldbook	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Hardness									
Hardness	mg CaCO3/L			547.5	699.5	506.4	511.3	746.8	475.7
Total Metals									
Antimony	mg/L	0.006	1. Basin Plan	0.0004J	0.0008	0.0005	0.0004J	0.0008	0.0004J
Arsenic	mg/L	0.05	1. Basin Plan	0.0048	0.0024	0.0053	0.0037	0.0027	0.0037
Cadmium	mg/L	0.005	1. Basin Plan	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004
Chromium	mg/L	0.05	1. Basin Plan	0.0002J	0.0002J	0.0002J	0.0002J	0.0001J	0.0001J
Copper	mg/L	1.0	1. Basin Plan	0.0017	0.0026	0.0021	0.0009	0.0014	0.0019
Lead	mg/L	NA		0.0002	<0.0001	0.0001	0.0002	<0.0001	0.0001
Nickel	mg/L	0.1	1. Basin Plan	0.0020	0.0019	0.0029	0.0018	0.0013	0.0014
Selenium	mg/L	0.005	16. 40 CFR 131.38	0.0005	0.0012	0.0007	0.0005	0.0015	0.0008
Zinc	mg/L	5.0	1. Basin Plan	0.0018	0.0051	0.0047	0.0016	0.0026	0.0031

Table D.5-1. Dry Weather Monitoring Results for Los Peñasquitos Creek WMA, 2007-2008.

Analyte	Units	Water Quality Benchmarks	Source	Los Peñasquitos Creek					
				MLS	TWAS-1	TWAS-2	MLS	TWAS-1	TWAS-2
				9/26/07-9/27/07	9/26/07-9/27/07	9/26/07-9/27/07	6/2/08-6/3/08	6/2/08-6/3/08	6/2/08-6/3/08
Dissolved Metals									
Antimony	mg/L	0.006	1. Basin Plan	0.0005	0.0008	0.0005	0.0004J	0.0008	0.0003J
Arsenic	mg/L	0.34 (acute) and 0.15 (chronic)	16. 40 CFR 131.38	0.0049	0.0025	0.0045	0.0036	0.0026	0.0030
Cadmium	mg/L	(e)	16. 40 CFR 131.38	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004
Chromium	mg/L	(e)	16. 40 CFR 131.38	0.0001J	0.0001J	0.0001J	<0.0005	<0.0005	<0.0005
Copper	mg/L	(e)	16. 40 CFR 131.38	0.0018	0.0029	0.0020	0.0009	0.0012	0.0012
Lead	mg/L	(e)	16. 40 CFR 131.38	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Nickel	mg/L	(e)	16. 40 CFR 131.38	0.0027	0.0020	0.0029	0.0016	0.0012	0.0014
Selenium	mg/L	NA	16. 40 CFR 131.38	0.0006	0.0012	0.0006	0.0005	0.0014	0.0008
Zinc	mg/L	(e)	16. 40 CFR 131.38	0.0036	0.0061	0.0049	0.0006	0.0021	0.0020
Toxicity									
<i>Ceriodaphnia</i> 96-hr	NOEC (%)	100		100	100	100	100	100	100
<i>Ceriodaphnia</i> 7-day survival	NOEC (%)	100		100	100	100	100	100	100
<i>Ceriodaphnia</i> 7-day reproduction	NOEC (%)	100		50	50	50	50	50	100
<i>Hyalella</i> 96-hr	NOEC (%)	100		100	100	100	100	100	100
<i>Selenastrum</i> 96-hr	NOEC (%)	100		100	100	100	100	<6.25	100

See last page for footnotes and source references.

- (a) Water Quality Benchmark for Enterococi are based on the maximum criteria for infrequently used freshwater area by the San Diego Regional Water Quality Control Plan for the San Diego Region (Basin Plan), 1994 (with amendments effective prior to April 25, 2007).
- (b) Water Quality Benchmark is based on CMC (salmonids absent) and CCC (early life stages present) using water temperature and pH described in the U.S. EPA, 1999 Update of Ambient Water Quality Criteria for Ammonia, EPA-822-R-99-014, December 1999.
- (c) Nutrient analytes for ambient conditions are assessed based on a weight of evidence approach using the EPA's Nutrient Numeric Endpoint Tool to determine if beneficial uses have potential for impairment.
- (d) Water Quality Benchmark for total dissolved solids is based on the San Diego Regional Water Quality Control Plan by watershed for the San Diego Region (Basin Plan), 1994 (with amendments effective prior to April 25, 2007).
- (e) Water Quality Benchmark for dissolved metal fractions are based on total hardness and are calculated as described by the USEPA Federal Register Doc. 40 CFR Part 131, May 18, 2000.

NA indicate no criteria or published value was available or applicable to the matrix or program.

Shaded text – exceeds water quality benchmarks.

* Indicates detection limit exceeds water quality Benchmark.

**Indicates no water at sampling time.

Sources

Please refer to the San Diego County Copermittee Regional Monitoring Program Benchmark Sources for benchmark source citations.

Table D.5-2. Wet Weather Monitoring Results for Los Peñasquitos Creek WMA, 2007-2008.

Analyte	Units	Water Quality Benchmarks	Source	Los Peñasquitos Creek					
				MLS	TWAS-1	TWAS-2	MLS	TWAS-1	TWAS-2
				11/30/07	11/30/07	11/30/07	2/3/08-2/4/08	2/3/08	2/3/08
General/Physical/Organic									
Electrical Conductivity	umhos/cm		2. CCR, 5. Goldbook	1,253	196	567	1,336	208	373
Oil & Grease	mg/L	10	1. Basin Plan, 3. Anacostia River TMDL, 4. MSGP 2000	2.3J	4.4J	2.8J	<5	3.3J	2.2J
pH	pH scale	6.5-9.0	1. Basin Plan	7.11	7.04	7.28	8.33	7.43	7.62
Water Temperature	Celcius			16.40	17.20	16.8	12.30	13.20	12.5
Bacteriological									
Enterococci	MPN/100mL	NA	1. Basin Plan	22,000	14,000	80,000	3,000	5,000	5,000
Fecal Coliform	MPN/100mL	400	1. Basin Plan REC-1/REC-2	22,000	17,000	70,000	300	1,700	1,700
Total Coliform	MPN/100mL	NA	1. Basin Plan	22,000	110,000	110,000	5,000	23,000	17,000
Wet Chemistry									
Ammonia as N	mg/L	(a)	6. U.S. EPA Water Quality Criteria (Freshwater)	0.44	0.78	0.62	<0.03	0.1	0.1
Biochemical Oxygen Demand	mg/L	30	4. MSGP 2000, 8. McNeeley (1979)	15	12	15	<2	3.4	2.2
Chemical Oxygen Demand	mg/L	120	4. MSGP 2000	75	49	60	28	22	23
Dissolved Organic Carbon	mg/L			20	12.7	16.4	7	6.5	5.3
Dissolved Phosphorus	mg/L	2	4. MSGP 2000	0.63	0.69	0.1	0.17	0.2	0.16
Nitrate as N	mg/L	10	1. Basin Plan	1.7	1.3	1.3	0.38	0.2	0.44
Nitrite as N	mg/L	1	1. Basin Plan	0.07	0.1	0.09	<0.05	<0.05	0.02J
Methylene Blue Active Substances	mg/L	0.5	1. Basin Plan	0.25	0.158	0.268	0.10	0.062	0.096
Total Dissolved Solids	mg/L	500 (b)	1. Basin Plan	906	524	322	822	496	298
Total Kjeldahl Nitrogen	mg/L			2.7	3.9	2.2	0.84	0.84	0.98
Total Organic Carbon	mg/L			21.7	14.3	16.9	6.5	5.7	5.5
Total Phosphorus	mg/L	2	4. MSGP 2000	0.91	0.606	1.01	0.21	0.33	0.41
Total Suspended Solids	mg/L	100	4. MSGP 2000, 1. Basin Plan	130	260	113	26	40	200
Turbidity	NTU	20	1. Basin Plan	73	164	84	14.9	65	147
Pesticides									
Chlorpyrifos	µg/L	0.02 (acute) / 0.014 (chronic)	12. CA Dept. of Fish & Game, 2000	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Diazinon	µg/L	0.08 acute and 0.05 chronic	12. CA Dept. of Fish & Game, 2000, 11. Chollas Creek TMDL for Diazinon, 10. U.S. EPA, Aquatic Life Ambient Water Quality Criteria Diazinon	<0.004	<0.004	0.057	<0.004	<0.004	0.006
Malathion	µg/L	0.43	13. CA Dept. of Fish & Game, 1998, 5. Goldbook	0.068	<0.006	0.121	<0.006	<0.006	0.014
Hardness									
Hardness	mg CaCO3/L			220	49.2	93.9	178	45.2	66.5
Total Metals									
Antimony	mg/L	NA	1. Basin Plan	0.0010	0.0014	0.0014	0.0007	0.0011	0.0007
Arsenic	mg/L	NA	1. Basin Plan	0.0048	0.0074	0.0046	0.0028	0.0032	0.0033
Cadmium	mg/L	NA	1. Basin Plan	<0.0004	0.0004	<0.0004	<0.0004	<0.0004	<0.0004
Chromium	mg/L	NA	1. Basin Plan	0.0013	0.0047	0.0016	0.0008	0.0015	0.0014
Copper	mg/L	NA	1. Basin Plan	0.0077	0.0417	0.0183	0.0033	0.0128	0.0093
Lead	mg/L	NA		0.0023	0.0152	0.0047	0.0004	0.0037	0.0046
Nickel	mg/L	NA	1. Basin Plan	0.0025	0.0087	0.0032	0.0012	0.0028	0.0020
Selenium	mg/L	NA	16. 40 CFR 131.38	0.0006	0.0004J	0.0006	0.0005	0.0002J	0.0002J
Zinc	mg/L	NA	1. Basin Plan	0.0248	0.2228	0.0635	0.0064	0.0708	0.0465

Table D.5-2. Wet Weather Monitoring Results for Los Peñasquitos Creek WMA, 2007-2008.

Analyte	Units	Water Quality Benchmarks	Source	Los Peñasquitos Creek					
				MLS	TWAS-1	TWAS-2	MLS	TWAS-1	TWAS-2
				11/30/07	11/30/07	11/30/07	2/3/08-2/4/08	2/3/08	2/3/08
Dissolved Metals									
Antimony	mg/L	0.0060	1. Basin Plan	0.0009	0.0014	0.0012	0.0007	0.0012	0.0007
Arsenic	mg/L	0.34 (c)	16. 40 CFR 131.38	0.0038	0.0025	0.0028	0.0029	0.0020	0.0024
Cadmium	mg/L	(d)	16. 40 CFR 131.38	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004
Chromium	mg/L	(d)	16. 40 CFR 131.38	0.0003J	0.0006	0.0003J	0.0004J	0.0006	0.0005
Copper	mg/L	(d)	16. 40 CFR 131.38	0.0037	0.0056	0.0042	0.0028	0.0053	0.0035
Lead	mg/L	(d)	16. 40 CFR 131.38	0.00006J	0.0002	0.0001	<0.0001	<0.0001	<0.0001
Nickel	mg/L	(d)	16. 40 CFR 131.38	0.0015	0.0020	0.0017	0.0012	0.0012	0.0009
Selenium	mg/L	NA	16. 40 CFR 131.38	0.0005	0.0004J	0.0006	0.0005	0.0002J	0.0003J
Zinc	mg/L	(d)	16. 40 CFR 131.38	0.0055	0.0125	0.0090	0.0023	0.0120	0.0043
Toxicity									
<i>Ceriodaphnia</i> 96-hr	NOEC (%)	100		100	100	100	100	100	100
<i>Ceriodaphnia</i> 7-day survival	NOEC (%)	100		100	100	100	100	100	100
<i>Ceriodaphnia</i> 7-day reproduction	NOEC (%)	100		100	100	100	100	100	100
<i>Hyalella</i> 96-hr	NOEC (%)	100		50	100	25	100	100	50
<i>Selenastrum</i> 96-hr	NOEC (%)	100		100	100	100	100	100	100

(a) Water Quality Benchmark is based on CMC (salmonids absent) using pH described in the U.S. EPA, 1999 Update of Ambient Water Quality Criteria for Ammonia, EPA-822-R-99-014, December 1999.

(b) Water Quality Benchmark for total dissolved solids is based on the San Diego Regional Water Quality Control Plan by watershed for the San Diego Region (Basin Plan), 1994 (with amendments effective prior to April 25, 2007).

(c) Water Quality Benchmark for dissolved metal fractions are based on a default water effects ratios (WER) value of 1 and are calculated as described by the USEPA Federal Register Doc. 40 CFR Part 131, May 18, 2000.

(d) Water Quality Benchmark for dissolved metal fractions are based on total hardness and are calculated as described by the USEPA Federal Register Doc. 40 CFR Part 131, May 18, 2000. The Criteria Maximum Concentration (CMC) was used.

NA indicate no criteria or published value was available or applicable to the matrix or program.

Shaded text – exceeds water quality benchmark.

Sources

Please refer to the San Diego County Copermittee Regional Monitoring Program Benchmark Sources for benchmark source citations.

Table D.5-3. Analytes Measured at the Los Peñasquitos Creek Mass Loading Station.

Analyte	Units	Water Quality Benchmarks	Source	2001-2002			2002-2003			2003-2004			2004-2005		
				11/29/01	2/17/02	3/17/02	11/8/02	12/16/02	2/11/03	11/12/03	2/3/04	2/18/04	10/17/04	2/11/05	2/18/05
General / Physical / Organic															
Electrical Conductivity	umhos/cm	NA	2. CCR, 5. Goldbook	2640	2700	1590	1827	1939	2600	2470	3060	3540	3270	2690	1213
Oil And Grease	mg/L	10	1 Basin Plan, 3. Anacostia River TMDL, 4. MSGP 2000	<1	1	<1	3.24	<1.00	1.39	<1	<1	<1	<1	<1	<1
pH	pH scale	6.5-9.0	1. Basin Plan	7.7	7.8	7.5	7.46	7.63	7.78	6.91	7.83	8.29	7.76	7.48	6.85
Water Temperature	Celcius						16.3	15	12.8	15.60	12.40	12.20	18.00	12.30	13.90
Bacteriological															
Enterococci	MPN/100mL	NA	1. Basin Plan	500	1,700	3,000	230,000	500	22,000	700	1,700	500	1,112	3,000	8,000
Fecal Coliform	MPN/100mL	400	1. Basin Plan REC-1/REC-2	130	500	300	30,000	500	1,700	1,300	130	130	500	500	2,200
Total Coliform	MPN/100mL	NA	1. Basin Plan	1,700	3,000	500	500,000	1,400	50,000	5,000	13,000	230	17,000	13,000	50,000
Wet Chemistry															
Ammonia As N	mg/L	(a)	6. U.S. EPA Water Quality Criteria (Freshwater)	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.14	<0.1
Biological Oxygen Demand	mg/L	30	4. MSGP 2000, 8. McNeeley (1979)	3.1	5.6	21.3	5.55	<2.0	8.31	3.28	28.6	5.28	23.7	3.75	2.31
Chemical Oxygen Demand	mg/L	120	4. MSGP 2000	<25	50	54	73	53	115	47	108	56	143	62	36
Dissolved Organic Carbon	mg/L						16.8	11.0	11.2	14	6.41	77.2	27.2	4.44	4.66
Dissolved Phosphorus	mg/L	2	4. MSGP 2000	0.9	<0.05	0.15	0.52	0.40	0.28	0.21	0.13	0.11	0.14	0.1	0.51
Nitrate As N	mg/L	10	1. Basin Plan	0.2	0.3	0.3	1.32	0.98	0.60	0.28	0.11	<0.05	0.09	0.6	1.06
Nitrite As N	mg/L	1	1. Basin Plan	<0.05	<0.05	<0.05	0.11	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Surfactants (MBAS)	mg/L	0.5	1. Basin Plan	<0.5	<0.5	<0.5	0.2	<0.1	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Total Dissolved Solids	mg/L	500 (b)	1. Basin Plan	1580	1590	1010	955	1280	997	1380	1890	2040	2120	1500	804
Total Kjeldahl Nitrogen	mg/L	NA		1.7	1	1.2	1.9	0.8	1.2	1.2	2.5	2.1	1.6	1.9	0.8
Total Organic Carbon	mg/L						22.7	57.4	13.6	10.5	8.86	95.6	29.9	9.51	10.8
Total Phosphorus	mg/L	2	4. MSGP 2000	0.1	0.15	0.23	0.73	0.60	0.39	0.23	0.2	0.17	0.14	0.28	0.69
Total Suspended Solids	mg/L	100	4. MSGP 2000, 1. Basin Plan	<20	<20	<20	35	58	38	27	<20	<20	<20	<20	108
Turbidity	NTU	20	1. Basin Plan	3.8	3.33	5.05	17.1	45.4	29.9	7.53	8.98	2.74	7.89	9.05	56.4
Pesticides															
Chlorpyrifos	µg/L	0.02	12. CA Dept. of Fish & Game, 2000	<0.03*	<0.03*	<0.03*	0.055	0.067	<0.03*	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Diazinon	µg/L	0.08	12. CA Dept. of Fish & Game, 2000, 11. Chollas Creek TMDL for Diazinon, 10. U.S. EPA, Aquatic Life Ambient Water Quality Criteria Diazinon	0.12	0.06	0.13	0.231	0.040	0.077	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Malathion	µg/L	0.43	13. CA Dept. of Fish & Game, 1998, 5. Goldbook				<0.10	<0.10	<0.10	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Hardness															
Total Hardness	mg CaCO3/L			808	815	551	428	602	602	692	805	880	1000	707	379
Total Metals															
Antimony	mg/L	NA	1. Basin Plan	<0.002	<0.002	<0.002	<0.002	0.005	0.009	<0.005	<0.005	<0.006	<0.005	<0.005	<0.005
Arsenic	mg/L	NA	1. Basin Plan	0.002	0.002	0.003	0.012	0.005	0.003	<0.002	0.006	0.005	0.005	0.004	<0.002
Cadmium	mg/L	NA	1. Basin Plan	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Chromium	mg/L	NA	1. Basin Plan	<0.005	<0.005	<0.005	0.008	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	mg/L	NA	1. Basin Plan	<0.005	<0.005	0.008	0.021	0.004	0.010	<0.005	0.008	0.006	<0.005	<0.005	<0.005
Lead	mg/L	NA		<0.002	<0.002	0.003	0.011	0.004	0.003	<0.002	<0.002	<0.002	<0.002	<0.002	0.002
Nickel	mg/L	NA	1. Basin Plan	<0.002	<0.002	<0.002	0.026	<0.002	0.002	0.003	<0.002	<0.002	0.003	0.002	0.002
Selenium	mg/L	NA	16. 40 CFR 131.38	<0.002	<0.002	<0.002	<0.004	<0.004	<0.004	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	mg/L	NA	1. Basin Plan	<0.020	<0.020	0.020	0.058	0.006	<0.020	0.028	<0.02	<0.02	<0.02	<0.02	<0.02
Dissolved Metals															
Antimony	mg/L	0.006	1. Basin Plan	<0.002	<0.002	<0.002	<0.002	0.002	<0.002	<0.005	<0.005	<0.006	<0.005	<0.005	<0.005
Arsenic	mg/L	0.34 (c)	16. 40 CFR 131.38	0.002	<0.001	0.003	0.004	0.003	0.003	0.002	0.004	0.004	<0.002	<0.002	<0.002
Cadmium	mg/L	(d)	16. 40 CFR 131.38	<0.001	<0.001	<0.001	0.0002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Chromium	mg/L	(d)	16. 40 CFR 131.38	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	mg/L	(d)	16. 40 CFR 131.38	<0.005	<0.005	<0.005	0.007	<0.005	0.027	<0.005	0.005	0.005	<0.005	<0.005	<0.005
Lead	mg/L	(d)	16. 40 CFR 131.38	<0.002	<0.002	<0.002	<0.002	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Nickel	mg/L	(d)	16. 40 CFR 131.38	<0.002	0.003	<0.002	0.003	<0.002	0.002	0.002	0.002	<0.002	0.003	0.002	0.002
Selenium	mg/L	NA	16. 40 CFR 131.38	<0.002	<0.002	<0.002	<0.004	<0.004	<0.004	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	mg/L	(d)	16. 40 CFR 131.38	<0.020	<0.020	<0.020	<0.020	0.020	0.106	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Toxicity															
Ceriodaphnia 96-hr	NOEC (%)	100		100	100	100	100	100	100	100	100	100	100	100	100
Ceriodaphnia 7-day survival	NOEC (%)	100		100	100	100	100	100	100	100	100	100	100	100	100
Ceriodaphnia 7-day reproduction	NOEC (%)	100		100	100	100	100	100	100	100	100	100	100	100	100
Hyalella 96-hr	NOEC (%)	100		100	100	100	100	100	100	100	100	100	100	100	100
Selenastrum 96-hr	NOEC (%)	100		100	100	100	100	100	100	100	100	100	100	100	100

See last page for footnotes and source references.

Table D.5-3. Analytes Measured at the Los Peñasquitos Creek Mass Loading Station.

Analyte	Units	Water Quality Benchmarks	Source	2005-2006			2006-2007			2007-2008		Frequency Above Benchmarks	Mean Ratio to Benchmarks
				10/17/05	2/20/06	2/28/06	12/10/06	1/30/07	2/19/07	11/30/07	2/3/08-2/4/08		
General / Physical / Organic													
Electrical Conductivity	umhos/cm	NA	2. CCR, 5. Goldbook	2980	2440	113	3300	3270	974	1,253	1,336		
Oil And Grease	mg/L	10	1 Basin Plan, 3. Anacostia River TMDL, 4. MSGP 2000	<1	1.05	<1	<5	<5	<5	2.3J	<5	0%	0.12
pH	pH scale	6.5-9.0	1. Basin Plan	7.32	6.66	6.79	7.73	8.08	7.21	7.11	8.33	0%	0.00
Water Temperature	Celcius			17.40	11.50	13.70	13.50	10.50	14.60	16.40	12.30		
Bacteriological													
Enterococci	MPN/100mL	NA	1. Basin Plan	1,300,000	2,300	30,000	230	300	13,000	22,000	3,000		
Fecal Coliform	MPN/100mL	400	1. Basin Plan REC-1/REC-2	170,000	1,112	5,000	800	500	2,300	22,000	300	75%	29.99
Total Coliform	MPN/100mL	NA	1. Basin Plan	1,300,000	30,000	30,000	1,300	800	30,000	22,000	5,000		
Wet Chemistry													
Ammonia As N	mg/L	(a)	6. U.S. EPA Water Quality Criteria (Freshwater)	<0.1	0.3	0.11	0.37	<0.1	0.94	0.44	<0.03	0%	0.01
Biological Oxygen Demand	mg/L	30	4. MSGP 2000, 8. McNeeley (1979)	6.16	<2	5.24	<2	3.87	6.01	15	<2	0%	0.25
Chemical Oxygen Demand	mg/L	120	4. MSGP 2000	63	42	76	58	45	37	75	28	5%	0.51
Dissolved Organic Carbon	mg/L			10.6	14.4	12.2	11.6	10.4	11	20	7		
Dissolved Phosphorus	mg/L	2	4. MSGP 2000	0.29	0.45	0.37	0.09	0.1	0.26	0.63	0.17	0%	0.15
Nitrate As N	mg/L	10	1. Basin Plan	1.24	0.94	0.9	<0.05	<0.05	0.47	1.7	0.38	0%	0.06
Nitrite As N	mg/L	1	1. Basin Plan	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.07	<0.05	0%	0.03
Surfactants (MBAS)	mg/L	0.5	1. Basin Plan	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.25	0.10	0%	0.44
Total Dissolved Solids	mg/L	500 (b)	1. Basin Plan	1940	1030	52	1890	1760	1080	906	822	95%	2.66
Total Kjeldahl Nitrogen	mg/L	NA		1	2.5	1.1	0.5	0.6	2.1	2.7	0.84		
Total Organic Carbon	mg/L			22.1	14.5	14.9	11.6	11.2	11.9	21.7	6.5		
Total Phosphorus	mg/L	2	4. MSGP 2000	0.48	0.47	0.38	0.22	0.24	0.35	0.91	0.21	0%	0.18
Total Suspended Solids	mg/L	100	4. MSGP 2000, 1. Basin Plan	20	30	182	22	<20	81	130	26	15%	0.42
Turbidity	NTU	20	1. Basin Plan	16.4	17.1	30.3	6.86	3.6	70.8	73	14.9	30%	1.08
Pesticides													
Chlorpyrifos	µg/L	0.02	12. CA Dept. of Fish & Game, 2000	<0.01	<0.02	<0.02	<0.002	<0.002	<0.002	<0.002	<0.002	13%	0.55
Diazinon	µg/L	0.08	12. CA Dept. of Fish & Game, 2000, 11. Chollas Creek TMDL for Diazinon, 10. U.S. EPA, Aquatic Life Ambient Water Quality Criteria Diazinon	<0.01	<0.02	<0.02	0.020	<0.004	<0.004	<0.004	<0.004	15%	0.46
Malathion	µg/L	0.43	13. CA Dept. of Fish & Game, 1998, 5. Goldbook	0.045	0.028	0.039	<0.006	<0.006	<0.006	0.068	<0.006	0%	0.05
Hardness													
Total Hardness	mg CaCO3/L			932	563	373	1080	908	572	220	178		
Total Metals													
Antimony	mg/L	NA	1. Basin Plan	<0.005	<0.005	<0.005	<0.002	<0.002	0.002	0.001	0.0007		
Arsenic	mg/L	NA	1. Basin Plan	0.006	0.004	0.007	<0.001	<0.001	0.003	0.0048	0.0028		
Cadmium	mg/L	NA	1. Basin Plan	<0.001	0.002	<0.001	0.007	<0.001	<0.001	<0.0004	<0.0004		
Chromium	mg/L	NA	1. Basin Plan	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.0013	0.0008		
Copper	mg/L	NA	1. Basin Plan	0.005	0.005	0.006	0.006	0.006	0.011	0.0077	0.0033		
Lead	mg/L	NA		<0.002	<0.002	0.003	0.001	<0.001	0.003	0.0023	0.00039		
Nickel	mg/L	NA	1. Basin Plan	0.005	0.004	0.003	0.004	0.004	0.005	0.0025	0.0012		
Selenium	mg/L	NA	16. 40 CFR 131.38	<0.005	<0.005	<0.005	<0.004	<0.004	<0.004	0.0006	0.0005		
Zinc	mg/L	NA	1. Basin Plan	0.039	<0.02	<0.02	<0.02	0.024	0.064	0.025	0.006		
Dissolved Metals													
Antimony	mg/L	0.006	1. Basin Plan	<0.005	<0.005	<0.005	<0.002	<0.002	0.002	0.0009	0.0007		
Arsenic	mg/L	0.34 (c)	16. 40 CFR 131.38	0.002	<0.001	<0.001	<0.001	<0.001	<0.001	0.0038	0.0029	0%	0.01
Cadmium	mg/L	(d)	16. 40 CFR 131.38	<0.001	0.001	<0.001	<0.001	<0.001	<0.001	<0.0004	<0.0004	0%	0.02
Chromium	mg/L	(d)	16. 40 CFR 131.38	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.0003J	0.0004J	0%	0.00
Copper	mg/L	(d)	16. 40 CFR 131.38	<0.005	0.005	<0.005	0.002	0.003	0.003	0.0037	0.0028	0%	0.10
Lead	mg/L	(d)	16. 40 CFR 131.38	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	0.00006J	<0.0001	0%	0.00
Nickel	mg/L	(d)	16. 40 CFR 131.38	0.003	0.003	0.002	0.003	0.002	0.002	0.0015	0.0012	0%	0.00
Selenium	mg/L	NA	16. 40 CFR 131.38	<0.005	<0.005	<0.005	<0.004	<0.004	<0.004	0.0005	0.0005	0%	0.01
Zinc	mg/L	(d)	16. 40 CFR 131.38	0.036	<0.02	<0.02	<0.02	<0.02	<0.02	0.0055	0.0023	0%	0.04
Toxicity													
<i>Ceriodaphnia</i> 96-hr	NOEC (%)	100		100	100	100	100	100	100	100	100	0%	1.00
<i>Ceriodaphnia</i> 7-day survival	NOEC (%)	100		100	100	100	100	100	100	100	100	0%	1.00
<i>Ceriodaphnia</i> 7-day reproduction	NOEC (%)	100		100	100	100	100	6.25	100	100	100	5%	1.75
<i>Hyalella</i> 96-hr	NOEC (%)	100		100	100	100	100	100	100	50	100	5%	1.05
<i>Selenastrum</i> 96-hr	NOEC (%)	100		100**	100	100	100	100	100	100	100	0%	1.00

See last page for footnotes and source references.

Table D.5-3. Analytes Measured at the Los Peñasquitos Creek Mass Loading Station.

Blank spaces have been verified and no data is available due to changes in the monitoring program.

(a) Water Quality Benchmark is based on CMC (salmonids absent) using pH described in the U.S. EPA, 1999 Update of Ambient Water Quality Criteria for Ammonia, EPA-822-R-99-014, December 1999.

(b) Water Quality Benchmark for total dissolved solids is based on the San Diego Regional Water Quality Control Plan by watershed for the San Diego Region (Basin Plan), 1994 (with amendments effective prior to April 25, 2007).

(c) Water Quality Benchmark for dissolved metal fractions are based on a default water effects ratios (WER) value of 1 and are calculated as described by the USEPA Federal Register Doc. 40 CFR Part 131, May 18, 2000.

(d) Water Quality Benchmark for dissolved metal fractions are based on total hardness and are calculated as described by the USEPA Federal Register Doc. 40 CFR Part 131, May 18, 2000. The Criteria Maximum Concentration (CMC) was used. NA indicate no criteria or published value was available or applicable to the matrix or program.

Shaded text – exceeds water quality benchmark. Underlined results are above the **CMC** water quality benchmark.

* Indicates detection limit above water quality benchmark.

** Indicates results should be interpreted with care due to method protocol discrepancy.

Sources

Please refer to the San Diego County Copermittee Regional Monitoring Program Benchmark Sources for benchmark source citations.

Table D.6-1. Analytes Measured at the Tecolote Creek Mass Loading Station.

Analyte	Units	Water Quality Benchmarks	Source	1993-1994		1994-1995				1995-1996			1996-1997		1997-1998		
				12/11/93	1/25/94	11/10/94	12/25/94	1/11/95	2/14/95	11/1/95	1/22/96	1/31/96	10/30/96	11/21/96	11/10/97	12/6/97	3/25/98
General / Physical / Organic																	
Electrical Conductivity	umhos/cm	NA	2. CCR, 5. Goldbook			3220	393	414	185	1040	989		2220	53.5	1130	1690	726
Oil And Grease	mg/L	10	1 Basin Plan, 3. Anacostia River TMDL, 4. MSGP 2000	1.96	3.1	1.2	1.28	0.82	1.55	11.4	2.4		2.5	2.4	3.6	1.6	0.6
pH	pH Units	6.5-9.0	1. Basin Plan			7.4	7.4	7.4	9.1		7.8						
Water Temperature	Celcius																
Bacteriological																	
Enterococci	MPN/100 mL	NA	1. Basin Plan														
Fecal Coliform	MPN/100 mL	4000	1. Basin Plan REC-1/REC-2	2,400	<30	11,000	17,000	>160,000	160,000	>16,000	16,000		8,000	16,000	160,000	3,640	8,850
Total Coliform	MPN/100 mL	NA	1. Basin Plan	240,000	240,000	50,000	>160,000	>160,000	>160,000	>16,000			160,000	24,000	160,000	20,000	20,000
Wet Chemistry																	
Ammonia As Nitrogen	mg/L	(a)	6. U.S. EPA Water Quality Criteria (Freshwater)		1.1	1.2	0.3	0.3	0.4	0.41	<0.2	<0.2	0.44	0.32	0.56	0.57	0.6
Biochemical Oxygen Demand	mg/L	30	4. MSGP 2000, 8. McNeeley (1979)		20	20	23.3	<3	9.5	12.8	<5	<5	13.4	12.9	33	43	22
Chemical Oxygen Demand	mg/L	120	4. MSGP 2000		280	100	150	91	74	126	132	69	56	35	89	20	22
Dissolved Organic Carbon	mg/L																
Dissolved Phosphorus	mg/L	2	4. MSGP 2000		0.2	0.4	<0.05	0.5	0.3	0.1	0.8	0.4	0.2	0.2	<0.1	0.1	0.12
Nitrate As N	mg/L	10	1. Basin Plan		4.2	<0.1	0.8	0.8	0.8				1.1	1	1.7	0.54	0.5
Nitrite As N	mg/L	1	1. Basin Plan		0.15	<0.05	<0.05	<0.05	<0.05							0.06	0.05
Surfactants (MBAS)	mg/L	0.5	1. Basin Plan		0.31	0.77	0.52	0.23	0.17	0.26	0.14	<0.1	<0.1	<0.1	<0.1	0.05	0.2
Total Dissolved Solids	mg/L	1000 (b)	1. Basin Plan	400	750	2300	260	370	680	1270	842	256	546	362	1730	447	318
Total Kjeldahl Nitrogen	mg/L	NA			10	3.7	3.7	2.3	3.6	3.9	2.6	0.89	2.9	2.7	1.6	<1	1.1
Total Organic Carbon	mg/L																
Total Phosphorus	mg/L	2	4. MSGP 2000		0.3	0.5	<0.05	1.1	0.4	0.5	<0.2	<0.2	0.8	0.5	0.7	0.12	0.23
Total Suspended Solids	mg/L	100	4. MSGP 2000, 1. Basin Plan	880	1500	140	300	76	130	140	244	92	348	104	410	503	2024
Turbidity	NTU	20	1. Basin Plan		8	36	43	66	39	79.6	17.4	12.1	120	131	160	27	96
Pesticides																	
Chlorpyrifos	µg/L	0.02	12. CA Dept. of Fish & Game, 2000														
Diazinon	µg/L	0.08	12. CA Dept. of Fish & Game, 2000, 11. Chollas Creek TMDL for Diazinon, 10. U.S. EPA, Aquatic Life Ambient Water Quality Criteria Diazinon														
Malathion	µg/L	0.43	13. CA Dept. of Fish & Game, 1998, 5. Goldbook														
Hardness																	
Total Hardness	mg CaCO3/L			210	550	1100	140	120	340	547	363	111	268	253	694	186	124
Total Metals																	
Antimony	mg/L	NA	1. Basin Plan	0.0014	0.0012	0.0019	<0.001	<0.001	0.0012	<0.0015			<0.003	0.003	<0.0015	<32*	<32*
Arsenic	mg/L	NA	1. Basin Plan	0.0069	0.013	<0.005	0.0089	<0.005	<0.005	0.008			0.009	0.007	0.001	<0.053*	<0.053*
Cadmium	mg/L	NA	1. Basin Plan	0.0023	0.0027	0.0003	0.0008	0.0003	0.0003	0.0009			0.0016	0.0019	<0.00025	<0.004	<0.004
Chromium	mg/L	NA	1. Basin Plan	0.0017	0.006	0.0028	0.0019	0.0028	0.0051	<0.005			0.010	<0.010	<0.005	<0.007	0.019
Copper	mg/L	NA	1. Basin Plan	0.030	0.054	0.0068	0.025	0.010	0.012	0.033			0.050	0.020	0.009	0.056	0.146
Lead	mg/L	NA		0.140	0.200	0.003	0.035	0.019	0.013	0.0173			0.050	0.026	<0.001	<0.042*	<0.042*
Nickel	mg/L	NA	1. Basin Plan	0.022	0.018	0.016	0.0065	<0.005	0.005	0.014			<0.010	<0.010	<0.005	<0.015	<0.015
Selenium	mg/L	NA	16. 40 CFR 131.38	<0.0005	0.0006	<0.0005	0.0012	0.0006	0.0005	0.0023			0.002	0.003	<0.001	<0.075*	<0.075*
Zinc	mg/L	NA	1. Basin Plan	0.780	0.490	0.034	0.170	0.059	0.062	0.137			0.230	0.120	0.069	0.068	0.130
Dissolved Metals																	
Antimony	mg/L	0.006	1. Basin Plan			0.0019	0.001	<0.001	<0.001		<0.0015	<0.0015	<0.003	<0.003			
Arsenic	mg/L	0.34 (c)	16. 40 CFR 131.38			<0.005	<0.005	<0.005	<0.005		0.005	0.003	0.002	0.002			
Cadmium	mg/L	(d)	16. 40 CFR 131.38			0.0003	<0.0002	<0.0002	<0.0002		<0.00025	<0.00025	<0.0005	0.0005			
Chromium	mg/L	(d)	16. 40 CFR 131.38			0.0019	<0.001	0.0014	<0.001		<0.005	<0.005	<0.010	<0.010			
Copper	mg/L	(d)	16. 40 CFR 131.38			0.0059	<0.005	0.005	0.0059		<0.008	0.006	0.010	<0.010			
Lead	mg/L	(d)	16. 40 CFR 131.38			0.0015	<0.001	<0.001	0.0019		0.002	<0.001	<0.002	<0.002			
Nickel	mg/L	(d)	16. 40 CFR 131.38			0.0150	<0.005	<0.005	<0.005		<0.005	<0.005	<0.010	<0.010			
Selenium	mg/L	NA	16. 40 CFR 131.38			<0.0005	<0.0005	<0.0005	<0.0005		<0.001	<0.001	<0.002	<0.003			
Zinc	mg/L	(d)	16. 40 CFR 131.38			0.039	0.013	0.017	0.016		0.026	<0.025	0.230	<0.050			
Toxicity																	
Ceriodaphnia 96-hr	NOEC (%)	100															
Ceriodaphnia 7-day survival	NOEC (%)	100															
Ceriodaphnia 7-day reproduction	NOEC (%)	100															
Hyalella 96-hr	NOEC (%)	100															
Selenastrum 96-hr	NOEC (%)	100															

See last page for footnotes and source references

Table D.6-1. Analytes Measured at the Tecolote Creek Mass Loading Station.

Analyte	Units	Water Quality Benchmarks	Source	1998-1999			1999-2000			2000-2001			2001-2002			2002-2003		
				11/8/98	1/25/99	3/15/99	2/12/00	3/5/00	4/17/00	10/27/00	1/8/01	2/13/01	11/29/01	2/17/02	3/8/02	11/8/02	12/16/02	2/11/03
General / Physical / Organic																		
Electrical Conductivity	umhos/cm	NA	2. CCR, 5. Goldbook	6070	629	542	746	823	792	2950	2350	338	3300	5090	3650	1694	311	322
Oil And Grease	mg/L	10	1 Basin Plan, 3. Anacostia River TMDL, 4. MSGP 2000	0.7	<0.5	<0.5	4.16	1.56	2.96	4	1	1	<1	<1	2	2.00	1.69	3.16
pH	pH Units	6.5-9.0	1. Basin Plan										7.7	7.4	7.7	6.67	7.61	7.55
Water Temperature	Celcius															17.10	15.50	14.80
Bacteriological																		
Enterococci	MPN/100 mL	NA	1. Basin Plan							9,000	17,000	5,000	7,000	7,000	3,000	35,000	23,000	14,000
Fecal Coliform	MPN/100 mL	4000	1. Basin Plan REC-1/REC-2	1,600	1,600	1,600	<2	1,600	<2	50,000	21,000	1,300	3,000	5,000	7,000	110,000	13,000	2,200
Total Coliform	MPN/100 mL	NA	1. Basin Plan	241,900	125,900	613,000	240	1,600	900	170,000	220,000	8,000	5,000	22,000	11,000	300,000	50,000	30,000
Wet Chemistry																		
Ammonia As Nitrogen	mg/L	(a)	6. U.S. EPA Water Quality Criteria (Freshwater)	0.6	0.57	0.51	1.57	<0.1	<0.1	0.91	0.5	0.4	0.9	0.19	0.28	0.44	0.34	0.26
Biochemical Oxygen Demand	mg/L	30	4. MSGP 2000, 8. McNeeley (1979)	30	5	9	11.7	2.38	5.7	14	13.2	<2	3.6	4.5	4.6	6.75	22.4	25.4
Chemical Oxygen Demand	mg/L	120	4. MSGP 2000	61	33	33	74	60	36	122	118	88	60	155	57	79	67	125
Dissolved Organic Carbon	mg/L															8.3	13.2	15.9
Dissolved Phosphorus	mg/L	2	4. MSGP 2000	0.52	0.15	0.1	<0.1	0.13	<0.1	0.14	0.28	0.27	0.11	0.4	0.13	0.16	0.32	0.82
Nitrate As N	mg/L	10	1. Basin Plan	0.52	0.7	0.53	3.3	0.6	2.3	1	0.7	0.6	0.4	0.5	0.4	0.81	0.84	0.90
Nitrite As N	mg/L	1	1. Basin Plan	0.1	<0.05	0.05	0.065	<0.05	<0.05	0.09	0.08	<0.05	<0.05	<0.05	<0.05	<0.05	0.06	0.06
Surfactants (MBAS)	mg/L	0.5	1. Basin Plan	0.51	0.08	<0.05	0.48	0.24	0.2	<0.5*	<0.5*	<0.5*	<0.5*	<0.5*	<0.5*	<0.1	<0.1	<0.1
Total Dissolved Solids	mg/L	1000 (b)	1. Basin Plan	1492	563	660	279	304	302	440	2320	250	1890	2200	2490	757	220	373
Total Kjeldahl Nitrogen	mg/L	NA		0.12	2.93	1.85	2.1	0.77	1.83	2.15	6.5	0.67	2.2	2	0.39	2.1	1.4	3.7
Total Organic Carbon	mg/L															21.9	27.0	15.4
Total Phosphorus	mg/L	2	4. MSGP 2000	0.61	0.16	0.16	0.21	0.34	0.4	0.5	0.32	0.38	0.24	0.65	0.22	0.6	1.84	1.03
Total Suspended Solids	mg/L	100	4. MSGP 2000, 1. Basin Plan	913	540	55	478	80	87	103	75	179	34	68	33	158	346	301
Turbidity	NTU	20	1. Basin Plan	84	45	17	17	63	60	73.8	63	85	21.3	8.99	10.7	102	200	200
Pesticides																		
Chlorpyrifos	µg/L	0.02	12. CA Dept. of Fish & Game, 2000	<0.05*		<0.5*	<0.5*	<0.5*	<0.5*	<0.05*	<0.5*	0.03	<0.03*	<0.03*	<0.03*	<0.03*	0.087	<0.03*
Diazinon	µg/L	0.08	12. CA Dept. of Fish & Game, 2000, 11. Chollas Creek TMDL for Diazinon, 10. U.S. EPA, Aquatic Life Ambient Water Quality Criteria Diazinon	0.4	0.28	0.41	<0.5*	<0.5*	0.18	0.47	<0.5*	0.16	0.22	0.19	0.09	0.185	0.095	0.155
Malathion	µg/L	0.43	13. CA Dept. of Fish & Game, 1998, 5. Goldbook							1.8	<0.5*	<0.1				<0.10	<0.10	0.87
Hardness																		
Total Hardness	mg CaCO3/L			148	218	277	216	126	105	209	1070	107	962	1180	1350	344	245	298
Total Metals																		
Antimony	mg/L	NA	1. Basin Plan	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.006	0.009
Arsenic	mg/L	NA	1. Basin Plan	0.004	0.0015	0.002	<0.001	0.006	0.009	0.007	0.007	0.005	0.001	0.004	0.004	0.008	0.015	0.013
Cadmium	mg/L	NA	1. Basin Plan	0.004	<0.00025	<0.00025	<0.00025	0.001	<0.00025	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Chromium	mg/L	NA	1. Basin Plan	<0.005	0.009	0.056	<0.005	<0.005	<0.005	0.006	<0.005	0.006	0.006	0.006	<0.005	<0.005	0.02	0.018
Copper	mg/L	NA	1. Basin Plan	<0.005	<0.005	<0.005	0.036	0.017	<0.005	0.023	0.012	0.016	0.008	0.009	0.009	0.03	0.050	0.038
Lead	mg/L	NA		0.040	0.003	0.023	0.027	<0.001	<0.001	0.015	0.008	0.018	0.004	0.004	<0.002	0.018	0.052	0.040
Nickel	mg/L	NA	1. Basin Plan	0.020	<0.005	0.009	<0.005	<0.005	<0.005	0.011	0.009	0.005	0.005	0.006	0.006	0.008	0.011	0.012
Selenium	mg/L	NA	16. 40 CFR 131.38	0.004	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	0.006	<0.002	<0.002	0.003	0.002	<0.004	<0.004	<0.004
Zinc	mg/L	NA	1. Basin Plan	<0.025	<0.025	0.071	0.160	0.012	0.050	0.080	0.040	0.080	0.022	0.028	0.034	0.096	0.208	0.235
Dissolved Metals																		
Antimony	mg/L	0.006	1. Basin Plan				<0.0015	<0.0015	<0.0015	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.002	0.002	0.002
Arsenic	mg/L	0.34 (c)	16. 40 CFR 131.38				<0.001	<0.001	<0.001	0.003	0.003	0.002	0.001	0.001	0.002	0.003	0.004	0.003
Cadmium	mg/L	(d)	16. 40 CFR 131.38				<0.00025	<0.00025	<0.00025	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Chromium	mg/L	(d)	16. 40 CFR 131.38				<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	mg/L	(d)	16. 40 CFR 131.38				<0.005	<0.005	<0.005	0.010	0.006	<0.005	0.006	<0.005	<0.005	0.008	0.006	0.042
Lead	mg/L	(d)	16. 40 CFR 131.38				<0.005	<0.001	<0.001	<0.002	<0.002	0.003	<0.002	<0.002	<0.002	<0.002	0.005	<0.002
Nickel	mg/L	(d)	16. 40 CFR 131.38				<0.005	<0.005	<0.005	0.009	0.008	0.002	0.004	0.005	0.005	0.004	<0.002	0.003
Selenium	mg/L	NA	16. 40 CFR 131.38				<0.001	<0.001	<0.001	<0.002	0.004	<0.002	<0.002	<0.002	<0.002	<0.004	<0.004	<0.004
Zinc	mg/L	(d)	16. 40 CFR 131.38				0.016	0.012	<0.001	0.050	0.030	<0.020	<0.020	0.029	<0.020	0.021	0.039	0.144
Toxicity																		
Ceriodaphnia 96-hr	NOEC (%)	100								25	100	100	100	100	100	100	100	50
Ceriodaphnia 7-day survival	NOEC (%)	100								12.5	50	100	50	100	100	100	100	50
Ceriodaphnia 7-day reproduction	NOEC (%)	100											50	100	100	100	100	50
Hyalella 96-hr	NOEC (%)	100								100	25	12.5	100	100	100	100	100	100
Selenastrum 96-hr	NOEC (%)	100											100	25	100	100	100	100

See last page for footnotes and source references

Table D.6-1. Analytes Measured at the Tecolote Creek Mass Loading Station.

Analyte	Units	Water Quality Benchmarks	Source	2003-2004			2004-2005			2005-2006			2006-2007			Frequency Above Benchmarks	Mean Ratio to Benchmarks
				11/1/03	11/12/03	2/3/04	10/27/04	02/11/05	02/18/05	10/17/05	2/19/06	2/28/06	12/10/06	1/30/07	2/19/07		
General / Physical / Organic																	
Electrical Conductivity	umhos/cm	NA	2. CCR, 5. Goldbook	4740	4490	850	167	473	199	7260	549	472	1840	3770	211		
Oil And Grease	mg/L	10	1 Basin Plan, 3. Anacostia River TMDL, 4. MSGP 2000	1.05	<1	<1	<1	1.32	<1	<1	<1	<1	<5	<5	<5	2%	0.18
pH	pH Units	6.5-9.0	1. Basin Plan	7.67	7.73	6.85	6.78	6.90	7.14	7.71	8.13	7.88	8.23	7.59	6.75	4%	0.05
Water Temperature	Celcius			16.40	16.60	13.60	14.70	14.40	14.10	17.00	12.50	15.30	18.00	9.00	12.90		
Bacteriological																	
Enterococci	MPN/100 mL	NA	1. Basin Plan	11,000	8,000	80,000	300,000	50,000	30,000	17,000	50,000	13,000	30,000	14,000	23,000		
Fecal Coliform	MPN/100 mL	4000	1. Basin Plan REC-1/REC-2	50,000	17,000	13,000	70,000	13,000	17,000	9,000	13,000	5,000	50,000	5,000	3,000	71%	6.99
Total Coliform	MPN/100 mL	NA	1. Basin Plan	230,000	50,000	50,000	800,000	130,000	130,000	170,000	110,000	80,000	500,000	11,000	23,000		
Wet Chemistry																	
Ammonia As Nitrogen	mg/L	(a)	6. U.S. EPA Water Quality Criteria (Freshwater)	0.38	<0.1	0.14	0.39	0.35	<0.1	0.16	0.51	0.13	0.65	0.42	1.56	0%	0.03
Biochemical Oxygen Demand	mg/L	30	4. MSGP 2000, 8. McNeeley (1979)	22.9	4.19	68.4	7.45	7.75	3.65	5.62	5.36	4.41	9.2	39.7	10	10%	0.47
Chemical Oxygen Demand	mg/L	120	4. MSGP 2000	211	99	148	173	88	25	71	115	40	89	83	151	28%	0.77
Dissolved Organic Carbon	mg/L			26.1	20.5	6.46	34	7.8	4.44	11.4	19.5	11.4	13.8	19.7	9.75		
Dissolved Phosphorus	mg/L	2	4. MSGP 2000	0.47	0.27	0.06	0.89	0.46	<0.05	0.2	0.16	0.24	<0.05	<0.05	0.13	0%	0.12
Nitrate As N	mg/L	10	1. Basin Plan	1.84	0.95	0.55	0.53	0.5	0.42	1.11	1.11	0.51	<0.05	<0.05	0.41	0%	0.09
Nitrite As N	mg/L	1	1. Basin Plan	0.07	0.06	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.07	0%	0.03
Surfactants (MBAS)	mg/L	0.5	1. Basin Plan	<0.5*	<0.5*	<0.5*	<0.5*	<0.5*	<0.5*	<0.5*	<0.5*	<0.5*	<0.5*	<0.5*	<0.5*	8%	0.45
Total Dissolved Solids	mg/L	1000 (b)	1. Basin Plan	2660	1070	1190	174	627	285	3190	404	377	1680	2310	308	34%	0.96
Total Kjeldahl Nitrogen	mg/L	NA		3	1.8	3.4	6	1	6.2	1.6	7.9	1.2	2.5	2.1	5.8		
Total Organic Carbon	mg/L			35.5	20	18.8	36.4	12.1	8.27	25.1	32.2	23.3	19.4	22.9	10.7		
Total Phosphorus	mg/L	2	4. MSGP 2000	1.14	0.34	0.58	2.87	0.47	0.5	0.24	0.75	0.37	0.56	0.15	0.63	3%	0.27
Total Suspended Solids	mg/L	100	4. MSGP 2000, 1. Basin Plan	102	<20	<20	2180	229	245	47	1020	76	166	65	442	66%	3.64
Turbidity	NTU	20	1. Basin Plan	34.7	13.5	201	540	44.7	67.4	19.9	321	16.5	84	12.4	282	73%	4.40
Pesticides																	
Chlorpyrifos	µg/L	0.02	12. CA Dept. of Fish & Game, 2000	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.002	<0.002	<0.002	14%	2.63
Diazinon	µg/L	0.08	12. CA Dept. of Fish & Game, 2000, 11. Chollas Creek TMDL for Diazinon, 10. U.S. EPA, Aquatic Life Ambient Water Quality Criteria Diazinon	0.116	0.073	0.053	<0.01	0.051	<0.01	0.044	<0.02	<0.02	<0.004	<0.004	<0.004	54%	1.82
Malathion	µg/L	0.43	13. CA Dept. of Fish & Game, 1998, 5. Goldbook	<0.01	0.269	0.085	<0.01	0.063	<0.01	0.052	0.086	0.125	<0.006	0.101	0.084	12%	0.50
Hardness																	
Total Hardness	mg CaCO3/L			1470	1300	591	126	330	152	1700	272	195	1000	1400	185		
Total Metals																	
Antimony	mg/L	NA	1. Basin Plan	0.007	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002	0.003	0.005		
Arsenic	mg/L	NA	1. Basin Plan	0.009	0.006	0.016	0.006	0.009	<0.002	0.01	0.006	0.003	<0.001	0.002	0.012		
Cadmium	mg/L	NA	1. Basin Plan	<0.001	<0.001	<0.001	0.001	<0.001	<0.001	<0.001	0.001	<0.001	0.004	<0.001	0.012		
Chromium	mg/L	NA	1. Basin Plan	0.005	<0.005	0.015	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.021		
Copper	mg/L	NA	1. Basin Plan	0.011	0.009	0.044	0.038	0.018	0.010	0.01	0.054	0.010	0.025	0.014	0.061		
Lead	mg/L	NA		0.006	0.003	0.034	0.065	0.019	0.011	0.003	0.038	0.002	0.014	0.005	0.056		
Nickel	mg/L	NA	1. Basin Plan	0.007	0.005	0.012	0.012	0.005	0.003	0.008	0.012	0.003	0.008	0.005	0.015		
Selenium	mg/L	NA	16. 40 CFR 131.38	<0.004	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.004	0.004	<0.004		
Zinc	mg/L	NA	1. Basin Plan	0.047	0.033	0.206	0.237	0.086	0.065	0.066	0.329	<0.02	0.109	0.057	0.391		
Dissolved Metals																	
Antimony	mg/L	0.006	1. Basin Plan	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002	<0.002	0.002		
Arsenic	mg/L	0.34 (c)	16. 40 CFR 131.38	0.004	0.003	0.003	<0.002	<0.002	<0.002	0.004	<0.001	<0.001	<0.001	<0.001	<0.001	0%	0.01
Cadmium	mg/L	(d)	16. 40 CFR 131.38	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0%	0.08
Chromium	mg/L	(d)	16. 40 CFR 131.38	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0%	0.02
Copper	mg/L	(d)	16. 40 CFR 131.38	<0.005	<0.005	<0.005	<0.005	0.006	<0.005	0.006	0.006	0.006	0.004	0.007	0.003	3%	0.30
Lead	mg/L	(d)	16. 40 CFR 131.38	<0.002	<0.002	<0.002	<0.002	0.003	<0.002	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	3%	0.20
Nickel	mg/L	(d)	16. 40 CFR 131.38	0.005	0.003	0.003	<0.002	0.003	<0.002	0.004	0.003	0.002	0.003	0.004	0.002	0%	0.03
Selenium	mg/L	NA	16. 40 CFR 131.38	<0.004	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.004	0.004	<0.004	0%	0.01
Zinc	mg/L	(d)	16. 40 CFR 131.38	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.052	0.024	<0.02	<0.02	<0.02	<0.02	0%	0.11
Toxicity																	
Ceriodaphnia 96-hr	NOEC (%)	100		100	100	100	100	100	100	100	100	100	100	100	100	10%	0.29
Ceriodaphnia 7-day survival	NOEC (%)	100		100	100	100	100	100	100	100	100	100	100	100	100	19%	0.67
Ceriodaphnia 7-day reproduction	NOEC (%)	100		50	100	100	100	100	100	50	100	100	100	100	100	22%	0.44
Hyalella 96-hr	NOEC (%)	100		100	100	100	100	100	100	100	25	100	100	100	100	14%	0.76
Selenastrum 96-hr	NOEC (%)	100		100	100	100	100	100	100	100**	100	100	100	100	100	6%	0.22

See last page for footnotes and source references

Table D.6-1. Analytes Measured at the Tecolote Creek Mass Loading Station.

Blank spaces have been verified and no data is available due to changes in the monitoring program.

(a) Water Quality Benchmark is based on CMC (salmonids absent) using pH described in the U.S. EPA, 1999 Update of Ambient Water Quality Criteria for Ammonia, EPA-822-R-99-014, December 1999.

(b) Water Quality Benchmark for total dissolved solids is based on the San Diego Regional Water Quality Control Plan by watershed for the San Diego Region (Basin Plan), 1994 (with amendments effective prior to April 25, 2007).

(c) Water Quality Benchmark for dissolved metal fractions are based on a default water effects ratios (WER) value of 1 and are calculated as described by the USEPA Federal Register Doc. 40 CFR Part 131, May 18, 2000.

(d) Water Quality Benchmark for dissolved metal fractions are based on total hardness and are calculated as described by the USEPA Federal Register Doc. 40 CFR Part 131, May 18, 2000. The Criteria Maximum Concentration (CMC) was used.

NA indicate no criteria or published value was available or applicable to the matrix or program.

Shaded text – exceeds water quality benchmark. Underlined results are above the CMC water quality benchmark.

* Indicates detection limit above water quality objective, and not included in frequency above water quality objective calculation.

** Indicates results should be interpreted with care due to method protocol discrepancy.

Sources

Table D.7-1. Analytes Measured at the San Diego River Mass Loading Station.

Analyte	Units	Water Quality Benchmarks	Source	2001-2002			2002-2003			2003-2004			2004-2005			2005-2006		
				11/29/01	2/17/02	3/17/02	11/8/02	12/16/02	2/11/03	11/12/03	2/3/04	3/2/04	10/27/04	2/11/05	2/18/05	10/18/05	2/19/06	3/11/06
General / Physical / Organic																		
Electrical Conductivity	umhos/cm	NA	2. CCR, 5. Goldbook	1680	2230	2270	1568	811	1550	2470	1546	995	560	1260	747	2870	2490	1262
Oil and Grease	mg/L	10	1 Basin Plan, 3. Anacostia River TMDL, 4. MSGP 2000	<1	4	<1	10.70	<1.00	2.39	4.83	<1	<1	<1	<1	<1	<1	<1	<1
pH	pH Units	6.5-9.0	1. Basin Plan	7.3	7.6	7.5	7.68	7.64	7.61	7.48	7.70	7.26	7.16	7.63	7.20	7.79	8.07	7.74
Water Temperature	Celcius						17.40	15.00	15.00	17.40	14.20	13.70	15.40	14.40	16.00	19.00	14.60	13.40
Bacteriological																		
Enterococci	MPN/100 mL	NA	1. Basin Plan	80	2,200	170	17,000	13,000	7,000	11,000	23,000	358	22,000	2,300	22,000	50,000	3,000	5,000
Fecal Coliform	MPN/100 mL	400	1. Basin Plan REC-1/REC-2	130	30,000	170	110,000	17,000	5,000	13,000	2,300	500	5,000	800	1,300	70,000	3,000	800
Total Coliform	MPN/100 mL	NA	1. Basin Plan	2,300	80,000	3,000	220,000	50,000	23,000	50,000	28,000	11,000	300,000	30,000	50,000	1,100,000	50,000	30,000
Wet Chemistry																		
Ammonia As N	mg/L	(a)	6. U.S. EPA Water Quality Criteria (Freshwater)	0.9	0.7	0.2	0.34	0.13	0.19	<0.1	<0.1	1.8	0.38	0.28	0.95	0.19	0.31	<0.1
Biochemical Oxygen Demand	mg/L	30	4. MSGP 2000, 8. McNeely (1979)	12	58.8	3.4	4.73	<2.0	20.7	8.44	45.2	2.94	4.22	3.68	3.39	8.24	2.21	5.17
Chemical Oxygen Demand	mg/L	120	4. MSGP 2000	28	154	54	71	48	63	83	67	52	98	283	56	62	65	74
Dissolved Organic Carbon	mg/L						6.80	8.68	10.70	16.6	4.26	5.57	33.2	2.94	5.62	9.41	12.8	5.59
Dissolved Phosphorus	mg/L	2	4. MSGP 2000	0.3	0.03	0.12	0.19	0.24	0.19	0.41	0.13	0.15	0.44	<0.05	0.32	0.24	0.37	0.11
Nitrate As N	mg/L	10	1. Basin Plan	0.9	0.8	0.3	0.67	0.56	0.57	0.5	0.2	0.63	0.37	0.66	1.01	0.63	0.25	0.29
Nitrite As N	mg/L	1	1. Basin Plan	0.12	0.07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Surfactants (MBAS)	mg/L	0.5	1. Basin Plan	<0.5	0.6	<0.5	<0.1	<0.1	0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Total Dissolved Solids	mg/L	1000 (b)	1. Basin Plan	869	691	796	1260	676	896	1540	1120	491	594	756	490	1490	1370	655
Total Kjeldahl Nitrogen	mg/L	NA		2.7	2.9	1.7	1.6	1.2	1.5	1.4	2.8	2	2.3	<0.5	23.3	1.6	4.3	1.5
Total Organic Carbon	mg/L						18.3	39.8	12.4	16.7	11.7	11.5	62	9.61	9.6	22.4	14.1	8.57
Total Phosphorus	mg/L	2	4. MSGP 2000	1.21	0.4	0.28	0.57	1.01	0.33	0.34	0.23	0.35	0.85	0.28	0.44	0.5	0.45	0.52
Total Suspended Solids	mg/L	100	4. MSGP 2000, 1. Basin Plan	<20	24	20	43	212	66	34	<20	21	477	50	61	31	42	48
Turbidity	NTU	20	1. Basin Plan	8.6	15.3	13.1	40.7	104	34.5	19.9	31.2	22.4	234	14.5	30.9	27.3	34.8	32.3
Pesticides																		
Chlorpyrifos	µg/L	0.02	12. CA Dept. of Fish & Game, 2000	<0.03*	<0.03*	0.03	0.043	0.051	0.048	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02
Diazinon	µg/L	0.08	12. CA Dept. of Fish & Game, 2000, 11. Chollas Creek TMDL for Diazinon, 10. U.S. EPA, Aquatic Life Ambient Water Quality Criteria Diazinon	0.21	0.10	0.08	0.051	0.051	0.038	<0.01	<0.01	<0.01	<0.01	0.038	<0.01	<0.01	<0.02	<0.02
Malathion	µg/L	0.43	13. CA Dept. of Fish & Game, 1998, 5. Goldbook				<0.10	<0.10	<0.10	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02
Hardness																		
Total Hardness	mg CaCO3/L			429	399	490	545	331	483	759	476	206	201	364	251	706	751	366
Total Metals																		
Antimony	mg/L	NA	1. Basin Plan	<0.002	0.003	<0.002	<0.002	0.006	0.007	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Arsenic	mg/L	NA	1. Basin Plan	0.003	0.002	0.005	0.005	0.008	0.004	0.005	0.006	0.003	0.006	0.006	<0.002	0.008	0.005	0.006
Cadmium	mg/L	NA	1. Basin Plan	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.012
Chromium	mg/L	NA	1. Basin Plan	0.005	<0.005	0.007	<0.005	0.02	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	mg/L	NA	1. Basin Plan	0.007	0.028	0.011	0.009	0.021	0.017	0.008	0.013	0.006	0.025	0.006	0.006	0.01	0.008	0.008
Lead	mg/L	NA		0.003	0.004	0.009	0.007	0.035	0.011	0.004	0.006	0.005	0.060	0.005	0.004	0.004	0.006	0.007
Nickel	mg/L	NA	1. Basin Plan	0.004	0.005	0.004	0.007	0.005	0.005	0.005	0.003	<0.002	0.006	0.003	0.002	0.007	0.005	0.003
Selenium	mg/L	NA	16. 40 CFR 131.38	<0.002	0.002	<0.002	<0.004	<0.004	<0.004	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	mg/L	NA	1. Basin Plan	0.029	0.112	0.067	0.031	0.118	0.077	0.046	0.053	0.026	0.213	0.033	0.032	0.075	0.045	0.068
Dissolved Metals																		
Antimony	mg/L	0.006	1. Basin Plan	<0.002	<0.002	<0.002	0.002	0.007	0.002	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Arsenic	mg/L	0.34 (c)	16. 40 CFR 131.38	0.002	<0.001	0.002	0.004	0.003	0.003	0.004	0.003	0.002	<0.002	<0.002	0.003	<0.001	<0.001	<0.001
Cadmium	mg/L	(d)	16. 40 CFR 131.38	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Chromium	mg/L	(d)	16. 40 CFR 131.38	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	mg/L	(d)	16. 40 CFR 131.38	0.006	0.015	<0.005	0.005	0.006	0.015	<0.005	0.005	<0.005	<0.005	<0.005	0.005	0.005	<0.005	<0.005
Lead	mg/L	(d)	16. 40 CFR 131.38	0.002	<0.002	<0.002	0.006	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Nickel	mg/L	(d)	16. 40 CFR 131.38	0.003	0.005	0.002	0.006	<0.002	0.003	0.003	0.003	<0.002	0.003	0.002	0.002	0.003	0.004	0.002
Selenium	mg/L	NA	16. 40 CFR 131.38	<0.002	<0.002	<0.002	<0.004	<0.004	<0.004	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	mg/L	(d)	16. 40 CFR 131.38	0.022	0.084	<0.020	0.026	0.037	0.070	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.053	0.026	0.035
Toxicity																		
Ceriodaphnia 96-hr	NOEC (%)	100		100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Ceriodaphnia 7-day survival	NOEC (%)	100		100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Ceriodaphnia 7-day reproduction	NOEC (%)	100		100	100	100	100	100	100	100	100	100	100	100	100	50	100	100
Hyalella 96-hr	NOEC (%)	100		100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Selenastrum 96-hr	NOEC (%)	100		100	25	100	100	100	100	100	100	100	100	100	100	100	100	100

See last page for footnotes and source references.

Table D.7-1. Analytes Measured at the San Diego River Mass Loading Station.

Analyte	Units	Water Quality Benchmarks	Source	2006-2007			Frequency Above Benchmarks	Mean Ratio to Benchmarks
				10/14/06	1/30/07	2/19/07		
General / Physical / Organic								
Electrical Conductivity	umhos/cm	NA	2. CCR, 5. Goldbook	1499	2830	994		
Oil and Grease	mg/L	10	1 Basin Plan, 3. Anacostia River TMDL, 4. MSGP 2000	<5	<5	<5	6%	0.19
pH	pH Units	6.5-9.0	1. Basin Plan	8.32	7.67	6.95	0%	0.00
Water Temperature	Celcius			18.80	11.20	14.10		
Bacteriological								
Enterococci	MPN/100 mL	NA	1. Basin Plan	17,000	2,300	9,000		
Fecal Coliform	MPN/100 mL	400	1. Basin Plan REC-1/REC-2	5,000	8,000	5,000	89%	38.47
Total Coliform	MPN/100 mL	NA	1. Basin Plan	30,000	14,000	23,000		
Wet Chemistry								
Ammonia As N	mg/L	(a)	6. U.S. EPA Water Quality Criteria (Freshwater)	0.54	0.51	1.04	0%	0.03
Biochemical Oxygen Demand	mg/L	30	4. MSGP 2000, 8. McNeeley (1979)	15.6	14.8	5.51	11%	0.41
Chemical Oxygen Demand	mg/L	120	4. MSGP 2000	112	59	52	11%	0.69
Dissolved Organic Carbon	mg/L			66	13	9.03		
Dissolved Phosphorus	mg/L	2	4. MSGP 2000	0.29	0.07	0.1	0%	0.10
Nitrate As N	mg/L	10	1. Basin Plan	0.9	<0.05	0.1	0%	0.05
Nitrite As N	mg/L	1	1. Basin Plan	<0.05	<0.05	<0.05	0%	0.03
Surfactants (MBAS)	mg/L	0.5	1. Basin Plan	<0.5	<0.5	<0.5	6%	0.49
Total Dissolved Solids	mg/L	1000 (b)	1. Basin Plan	1200	1350	642	39%	0.94
Total Kjeldahl Nitrogen	mg/L	NA		2.2	1.7	3.1		
Total Organic Carbon	mg/L			69.4	16	9.85		
Total Phosphorus	mg/L	2	4. MSGP 2000	0.51	0.09	0.33	0%	0.24
Total Suspended Solids	mg/L	100	4. MSGP 2000, 1. Basin Plan	111	34	124	22%	0.79
Turbidity	NTU	20	1. Basin Plan	58.1	24.5	59.6	72%	2.24
Pesticides								
Chlorpyrifos	µg/L	0.02	12. CA Dept. of Fish & Game, 2000	<0.002	<0.002	<0.002	25%	0.71
Diazinon	µg/L	0.08	12. CA Dept. of Fish & Game, 2000, 11. Chollas Creek TMDL for Diazinon, 10. U.S. EPA, Aquatic Life Ambient Water Quality Criteria Diazinon	<0.004	<0.004	<0.004	11%	0.43
Malathion	µg/L	0.43	13. CA Dept. of Fish & Game, 1998, 5. Goldbook	0.095	<0.006	<0.006	0%	0.05
Hardness								
Total Hardness	mg CaCO3/L			657	713	305		
Total Metals								
Antimony	mg/L	NA	1. Basin Plan	0.003	0.003	0.004		
Arsenic	mg/L	NA	1. Basin Plan	0.015	<0.001	0.004		
Cadmium	mg/L	NA	1. Basin Plan	0.003	<0.001	<0.001		
Chromium	mg/L	NA	1. Basin Plan	<0.005	<0.005	0.006		
Copper	mg/L	NA	1. Basin Plan	0.02	0.009	0.029		
Lead	mg/L	NA		0.016	0.004	0.024		
Nickel	mg/L	NA	1. Basin Plan	0.006	0.003	0.007		
Selenium	mg/L	NA	16. 40 CFR 131.38	<0.004	0.004	<0.004		
Zinc	mg/L	NA	1. Basin Plan	0.113	0.045	0.149		
Dissolved Metals								
Antimony	mg/L	0.006	1. Basin Plan	<0.002	<0.002	0.002		
Arsenic	mg/L	0.34 (c)	16. 40 CFR 131.38	0.003	<0.001	<0.001	0%	0.01
Cadmium	mg/L	(d)	16. 40 CFR 131.38	<0.001	<0.001	<0.001	0%	0.09
Chromium	mg/L	(d)	16. 40 CFR 131.38	<0.005	<0.005	<0.005	0%	0.01
Copper	mg/L	(d)	16. 40 CFR 131.38	0.003	0.005	0.003	0%	0.19
Lead	mg/L	(d)	16. 40 CFR 131.38	<0.001	<0.001	<0.001	0%	0.14
Nickel	mg/L	(d)	16. 40 CFR 131.38	0.004	<0.002	0.002	0%	0.02
Selenium	mg/L	NA	16. 40 CFR 131.38	<0.004	<0.004	<0.004	0%	0.01
Zinc	mg/L	(d)	16. 40 CFR 131.38	<0.02	<0.02	<0.02	0%	0.07
Toxicity								
<i>Ceriodaphnia</i> 96-hr	NOEC (%)	100		100	100	100	0%	0.00
<i>Ceriodaphnia</i> 7-day survival	NOEC (%)	100		100	100	100	0%	0.00
<i>Ceriodaphnia</i> 7-day reproduction	NOEC (%)	100		100	100	100	6%	0.11
<i>Hyalella</i> 96-hr	NOEC (%)	100		25	100	100	6%	0.22
<i>Selenastrum</i> 96-hr	NOEC (%)	100		100	100	100	6%	0.22

See last page for footnotes and source references.

Table D.7-1. Analytes Measured at the San Diego River Mass Loading Station.

Blank spaces have been verified and no data is available due to changes in the monitoring program.

- (a) Water Quality Benchmark is based on CMC (salmonids absent) using pH described in the U.S. EPA, 1999 Update of Ambient Water Quality Criteria for Ammonia, EPA-822-R-99-014, December 1999.
 - (b) Water Quality Benchmark for total dissolved solids is based on the San Diego Regional Water Quality Control Plan by watershed for the San Diego Region (Basin Plan), 1994 (with amendments effective prior to April 25, 2007).
 - (c) Water Quality Benchmark for dissolved metal fractions are based on a default water effects ratios (WER) value of 1 and are calculated as described by the USEPA Federal Register Doc. 40 CFR Part 131, May 18, 2000.
 - (d) Water Quality Benchmark for dissolved metal fractions are based on total hardness and are calculated as described by the USEPA Federal Register Doc. 40 CFR Part 131, May 18, 2000. The Criteria Maximum Concentration (CMC) was used.
- NA indicate no criteria or published value was available or applicable to the matrix or program.

Shaded text – exceeds water quality benchmark. Underlined results are above the **CMC** water quality benchmark.

* Indicates detection limit above water quality benchmark.

Sources

Please refer to the San Diego County Copermittee Regional Monitoring Program Benchmark Sources for benchmark source citations.

Table D.8-1. Dry Weather Monitoring Results for San Diego Bay WMA, 2007-2008.

Analyte	Units	Water Quality Benchmarks	Source	Chollas Creek	
				MLS	MLS
				3/4/08-3/5/08	6/2/08-6/3/08
General/Physical/Organic					
Electrical Conductivity	umhos/cm		2. CCR, 5. Goldbook	2990	1711
Oil & Grease	mg/L	10	1 Basin Plan, 3. Anacostia River TMDL	18.1	1.1J
pH	pH scale	6.5-9.0	1. Basin Plan	7.90	9.07
Water Temperature	Celcius			**	25.30
Bacteriological					
Enterococci	MPN/100mL	151 (a)	1. Basin Plan	80,000	130
Fecal Coliform	MPN/100mL	4000	1. Basin Plan REC-1/REC-2	130,000	170
Total Coliform	MPN/100mL	NA	1. Basin Plan	9,000,000	2,200
Wet Chemistry					
Ammonia as N	mg/L	(b)	6. U.S. EPA Water Quality Criteria (Freshwater)	1.44	0.24
Biochemical Oxygen Demand	mg/L	10	8. McNeeley (1979)	85.1	8.4
Chemical Oxygen Demand	mg/L	120	4. MSGP 2000	1700	100
Dissolved Organic Carbon	mg/L			518	35.8
Dissolved Phosphorus	mg/L	(c)	19. U.S. EPA Nutrient Numeric Endpoint Tool	3	0.79
Nitrate as N	mg/L	(c)	19. U.S. EPA Nutrient Numeric Endpoint Tool	<0.05	0.07
Nitrite as N	mg/L	(c)	19. U.S. EPA Nutrient Numeric Endpoint Tool	<0.05	<0.05
Methylene Blue Active Substances	mg/L	0.5	1. Basin Plan	0.059	0.55
Total Dissolved Solids	mg/L	500 (d)	1. Basin Plan	1,424	1,324
Total Kjeldahl Nitrogen	mg/L	NA		24	2.8
Total Organic Carbon	mg/L			608	38.3
Total Phosphorus	mg/L	(c)	19. U.S. EPA Nutrient Numeric Endpoint Tool	3.9	0.89
Total Suspended Solids	mg/L	58	14. NSQD, 1. Basin Plan	42.7	9.7
Turbidity	NTU	20	1. Basin Plan	34.7	6.3
Pesticides					
Chlorpyrifos	µg/L	0.02 (acute) / 0.014 (chronic)	12. CA Dept. of Fish & Game, 2000	<0.002	<0.002
Diazinon	µg/L	0.072 (acute) / 0.045 (chronic)	12. CA Dept. of Fish & Game, 2000, 11. Chollas Creek TMDL for Diazinon, 10. U.S. EPA, Aquatic Life Ambient Water Quality Criteria Diazinon	<0.004	<0.004
Malathion	µg/L	0.43 acute / 0.1 chronic	13. CA Dept. of Fish & Game, 1998, 5. Goldbook	<0.006	<0.006
Hardness					
Hardness	mg CaCO3/L			371.2	214.1
Total Metals					
Antimony	mg/L	0.006	1. Basin Plan	0.0045	0.0030
Arsenic	mg/L	0.05	1. Basin Plan	0.0093	0.0038
Cadmium	mg/L	0.005	1. Basin Plan	0.0012	0.0002J
Chromium	mg/L	0.05	1. Basin Plan	0.0016	0.0014
Copper	mg/L	1.0	1. Basin Plan	0.0898	0.0270
Lead	mg/L	NA		0.0054	0.0010
Nickel	mg/L	0.1	1. Basin Plan	0.0177	0.0038
Selenium	mg/L	0.005	16. 40 CFR 131.38	0.0062	0.0023
Zinc	mg/L	5.0	1. Basin Plan	0.1400	0.0124

Table D.8-1. Dry Weather Monitoring Results for San Diego Bay WMA, 2007-2008.

Analyte	Units	Water Quality Benchmarks	Source	Chollas Creek	
				MLS	MLS
				3/4/08-3/5/08	6/2/08-6/3/08
Dissolved Metals					
Antimony	mg/L	0.006	1. Basin Plan	0.0044	0.0029
Arsenic	mg/L	0.34 (acute) and 0.15 (chronic)	16. 40 CFR 131.38	0.0092	0.0038
Cadmium	mg/L	(e)	16. 40 CFR 131.38	0.0007	<0.0004
Chromium	mg/L	(e)	16. 40 CFR 131.38	0.0011	0.0012
Copper	mg/L	(e)	16. 40 CFR 131.38	0.0689	0.0237
Lead	mg/L	(e)	16. 40 CFR 131.38	0.0030	0.0003
Nickel	mg/L	(e)	16. 40 CFR 131.38	0.0165	0.0036
Selenium	mg/L	NA	16. 40 CFR 131.38	0.0068	0.0024
Zinc	mg/L	(e)	16. 40 CFR 131.38	0.1800	0.0060
Toxicity					
<i>Ceriodaphnia</i> 96-hr	NOEC (%)	100		50	100
<i>Ceriodaphnia</i> 7-day survival	NOEC (%)	100		50	100
<i>Ceriodaphnia</i> 7-day reproduction	NOEC (%)	100		25	100
<i>Hyalella</i> 96-hr	NOEC (%)	100		12.5	100
<i>Selenastrum</i> 96-hr	NOEC (%)	100		<6.25	100

- (a) Water Quality Benchmark for Enterococi are based on the maximum criteria for infrequently used freshwater area by the San Diego Regional Water Quality Control Plan for the San Diego Region (Basin Plan), 1994 (with amendments effective prior to April 25, 2007).
- (b) Water Quality Benchmark is based on CMC (salmonids absent) and CCC (early life stages present) using water temperature and pH described in the U.S. EPA, 1999 Update of Ambient Water Quality Criteria for Ammonia, EPA-822-R-99-014, December 1999.
- (c) Nutrient analytes for ambient conditions are assessed based on a weight of evidence approach using the EPA's Nutrient Numeric Endpoint Tool to determine if beneficial uses have potential for impairment.
- (d) Water Quality Benchmark for total dissolved solids is based on the San Diego Regional Water Quality Control Plan by watershed for the San Diego Region (Basin Plan), 1994 (with amendments effective prior to April 25, 2007).
- (e) Water Quality Benchmark for dissolved metal fractions are based on total hardness and are calculated as described by the USEPA Federal Register Doc. 40 CFR Part 131, May 18, 2000.

NA indicate no criteria or published value was available or applicable to the matrix or program.

Shaded text – exceeds water quality benchmarks. Underlined results are above the CMC water quality benchmark for metals.

* Indicates detection limit exceeds water quality Benchmark.

**Indicates no water at sampling time.

Sources

Please refer to the San Diego County Copermittee Regional Monitoring Program Benchmark Sources for benchmark source citations.

Table D.8-2. Wet Weather Monitoring Results for San Diego Bay WMA, 2007-2008.

Analyte	Units	Water Quality Benchmarks	Source	Chollas Creek	
				MLS	MLS
				11/30/07	2/3/08
General/Physical/Organic					
Electrical Conductivity	umhos/cm		2. CCR, 5. Goldbook	162	143.1
Oil & Grease	mg/L	10	1. Basin Plan, 3. Anacostia River TMDL, 4. MSGP 2000	18.7	2.8J
pH	pH scale	6.5-9.0	1. Basin Plan	6.83	7.59
Water Temperature	Celcius			17.10	13.20
Bacteriological					
Enterococci	MPN/100mL	NA	1. Basin Plan	80,000	80,000
Fecal Coliform	MPN/100mL	4000	1. Basin Plan REC-1/REC-2	50,000	11,000
Total Coliform	MPN/100mL	NA	1. Basin Plan	500,000	70,000
Wet Chemistry					
Ammonia as N	mg/L	(a)	6. U.S. EPA Water Quality Criteria (Freshwater)	0.94	0.13
Biochemical Oxygen Demand	mg/L	30	4. MSGP 2000, 8. McNeeley (1979)	27	4.3
Chemical Oxygen Demand	mg/L	120	4. MSGP 2000	91	26
Dissolved Organic Carbon	mg/L			18.2	5.4
Dissolved Phosphorus	mg/L	2	4. MSGP 2000	0.68	0.22
Nitrate as N	mg/L	10	1. Basin Plan	1.3	0.28
Nitrite as N	mg/L	1	1. Basin Plan	0.12	<0.03
Methylene Blue Active Substances	mg/L	0.5	1. Basin Plan	0.68	0.14
Total Dissolved Solids	mg/L	500 (b)	1. Basin Plan	184	184
Total Kjeldahl Nitrogen	mg/L			5.7	1.3
Total Organic Carbon	mg/L			20.4	5.8
Total Phosphorus	mg/L	2	4. MSGP 2000	0.61	0.37
Total Suspended Solids	mg/L	100	4. MSGP 2000, 1. Basin Plan	400	124
Turbidity	NTU	20	1. Basin Plan	129	59.7
Pesticides					
Chlorpyrifos	µg/L	0.02 (acute) / 0.014 (chronic)	12. CA Dept. of Fish & Game, 2000	<0.002	<0.002
Diazinon	µg/L	0.072 (acute) / 0.045 (chronic)	12. CA Dept. of Fish & Game, 2000, 11. Chollas Creek TMDL for Diazinon, 10. U.S. EPA, Aquatic Life Ambient Water Quality Criteria Diazinon	0.047	0.013
Malathion	µg/L	0.43	13. CA Dept. of Fish & Game, 1998, 5. Goldbook	<0.006	0.043
Hardness					
Hardness	mg CaCO3/L			22.4	17.2
Total Metals					
Antimony	mg/L	NA	1. Basin Plan	0.0024	0.0013
Arsenic	mg/L	NA	1. Basin Plan	0.0036	0.0032
Cadmium	mg/L	NA	1. Basin Plan	0.0008	0.0008
Chromium	mg/L	NA	1. Basin Plan	0.0058	0.0028
Copper	mg/L	NA	1. Basin Plan	0.0748	0.0321
Lead	mg/L	NA		0.0498	0.0435
Nickel	mg/L	NA	1. Basin Plan	0.0103	0.0080
Selenium	mg/L	NA	16. 40 CFR 131.38	0.0003J	0.0002J
Zinc	mg/L	NA	1. Basin Plan	0.4852	0.4523

Table D.8-2. Wet Weather Monitoring Results for San Diego Bay WMA, 2007-2008.

Analyte	Units	Water Quality Benchmarks	Source	Chollas Creek	
				MLS	MLS
				11/30/07	2/3/08
Dissolved Metals					
Antimony	mg/L	0.0060	1. Basin Plan	0.0002	0.0011
Arsenic	mg/L	0.34 (c)	16. 40 CFR 131.38	0.0025	0.0022
Cadmium	mg/L	(d)	16. 40 CFR 131.38	<0.0004	<0.0004
Chromium	mg/L	(d)	16. 40 CFR 131.38	0.0012	0.0009
Copper	mg/L	(d)	16. 40 CFR 131.38	<u>0.0111</u>	<u>0.0066</u>
Lead	mg/L	(d)	16. 40 CFR 131.38	0.0015	0.0004
Nickel	mg/L	(d)	16. 40 CFR 131.38	0.0038	0.0015
Selenium	mg/L	NA	16. 40 CFR 131.38	0.0003J	0.0002J
Zinc	mg/L	(d)	16. 40 CFR 131.38	<u>0.0780</u>	<u>0.0376</u>
Toxicity					
<i>Ceriodaphnia</i> 96-hr	NOEC (%)	100		100	100
<i>Ceriodaphnia</i> 7-day survival	NOEC (%)	100		100	100
<i>Ceriodaphnia</i> 7-day reproduction	NOEC (%)	100		100	100
<i>Hyalella</i> 96-hr	NOEC (%)	100		<u>12.5</u>	<u>6.25</u>
<i>Selenastrum</i> 96-hr	NOEC (%)	100		100	100

(a) Water Quality Benchmark is based on CMC (salmonids absent) using pH described in the U.S. EPA, 1999 Update of Ambient Water Quality Criteria for Ammonia, EPA-822-R-99-014, December 1999.

(b) Water Quality Benchmark for total dissolved solids is based on the San Diego Regional Water Quality Control Plan by watershed for the San Diego Region (Basin Plan), 1994 (with amendments effective prior to April 25, 2007).

(c) Water Quality Benchmark for dissolved metal fractions are based on a default water effects ratios (WER) value of 1 and are calculated as described by the USEPA Federal Register Doc. 40 CFR Part 131, May 18, 2000.

(d) Water Quality Benchmark for dissolved metal fractions are based on total hardness and are calculated as described by the USEPA Federal Register Doc. 40 CFR Part 131, May 18, 2000. The Criteria Maximum Concentration (CMC) was used.

NA indicate no criteria or published value was available or applicable to the matrix or program.

Shaded text – exceeds water quality benchmarks. Underlined results are above the CMC water quality benchmark.

Sources

Please refer to the San Diego County Copermittee Regional Monitoring Program Benchmark Sources for benchmark source citations.

Table D.8-3. Chollas Creek Additional Organic Analytes.

Analyte	Units	2007-2008			
		Wet		Dry	
		CC(SD-8)-MLS	CC(SD-8)-MLS	CC(SD-8)-MLS	CC(SD-8)-MLS
		11/30/2007	2/3/2008	3/5/2008	6/3/2008
PAHs					
1-Methylnaphthalene	ng/L	17.7	4.8	2.5	3.9
1-Methylphenanthrene	ng/L	33.6	13.8	2.5	2.5
2,3,5-Trimethylnaphthalene	ng/L	8.7	1	2.5	1
2,6-Dimethylnaphthalene	ng/L	21.8	4.1	2.5	3.3
2-Methylnaphthalene	ng/L	27.5	16	17	7
Acenaphthene	ng/L	9.5	2.1	2.5	2.5
Acenaphthylene	ng/L	13.1	4.8	2.5	2.5
Anthracene	ng/L	36.2	13.2	2.5	2.5
Benz[a]anthracene	ng/L	105.4	67.1	11	2.5
Benzo[a]pyrene	ng/L	97	85.8	2.5	2.5
Benzo[b]fluoranthene	ng/L	175.6	109.5	2.5	2.5
Benzo[e]pyrene	ng/L	178.2	95	2.5	2.5
Benzo[g,h,i]perylene	ng/L	169.2	115	2.5	2.5
Benzo[k]fluoranthene	ng/L	135.9	90.1	2.5	2.5
Biphenyl	ng/L	25.1	7.7	18	5.7
Chrysene	ng/L	301.3	112.7	15.4	2.5
Dibenz[a,h]anthracene	ng/L	18.2	27	2.5	2.5
Dibenzothiophene	ng/L	72.2	33.5	2.5	2.5
Fluoranthene	ng/L	447.3	185	22.5	2.5
Fluorene	ng/L	21.4	6.7	2.5	2.5
Indeno[1,2,3-c,d]pyrene	ng/L	85.2	112.1	2.5	2.5
Naphthalene	ng/L	50.8	20.7	27.8	12.2
Perylene	ng/L	52.9	58.7	2.5	2.5
Phenanthrene	ng/L	224.5	62.3	23.2	2.5
Pyrene	ng/L	442.5	191.9	30	2.5
Chlordane					
Chlordane-alpha	ng/L	16.5	12.3	2.5	2.5
Chlordane-gamma	ng/L	15.7	13.2	2.5	2.5
PCBs					
PCB003	ng/L	NA	2.5	2.5	2.5
PCB008	ng/L	2.5	2.5	2.5	2.5
PCB018	ng/L	2.5	2.5	2.5	2.5
PCB028	ng/L	2.5	2.5	2.5	2.5
PCB031	ng/L	2.5	2.5	2.5	2.5
PCB033	ng/L	2.5	2.5	2.5	2.5
PCB037	ng/L	2.5	2.5	2.5	2.5
PCB044	ng/L	2.5	2.5	2.5	2.5
PCB049	ng/L	2.5	2.5	2.5	2.5
PCB052	ng/L	2.5	2.5	2.5	2.5
PCB056/060	ng/L	NA	2.5	2.5	2.5
PCB066	ng/L	2.5	2.5	2.5	2.5
PCB070	ng/L	2.5	2.5	2.5	2.5
PCB074	ng/L	2.5	2.5	2.5	2.5
PCB077	ng/L	2.5	2.5	2.5	2.5
PCB081	ng/L	2.5	2.5	2.5	2.5

Table D.8-3. Chollas Creek Additional Organic Analytes.

Analyte	Units	2007-2008			
		Wet		Dry	
		CC(SD-8)-MLS	CC(SD-8)-MLS	CC(SD-8)-MLS	CC(SD-8)-MLS
		11/30/2007	2/3/2008	3/5/2008	6/3/2008
PCB087	ng/L	2.5	2.5	2.5	2.5
PCB095	ng/L	2.5	2.5	2.5	2.5
PCB097	ng/L	2.5	2.5	2.5	2.5
PCB099	ng/L	2.5	2.5	2.5	2.5
PCB101	ng/L	2.5	2.5	2.5	2.5
PCB105	ng/L	2.5	2.5	2.5	2.5
PCB110	ng/L	2.5	2.5	2.5	2.5
PCB114	ng/L	2.5	2.5	2.5	2.5
PCB118	ng/L	2.5	2.5	2.5	2.5
PCB119	ng/L	2.5	2.5	2.5	2.5
PCB123	ng/L	2.5	2.5	2.5	2.5
PCB126	ng/L	2.5	2.5	2.5	2.5
PCB128	ng/L	2.5	2.5	2.5	2.5
PCB138	ng/L	2.5	2.5	2.5	2.5
PCB141	ng/L	2.5	2.5	2.5	2.5
PCB149	ng/L	2.5	2.5	2.5	2.5
PCB151	ng/L	2.5	2.5	2.5	2.5
PCB153	ng/L	2.5	2.5	2.5	2.5
PCB156	ng/L	2.5	2.5	2.5	2.5
PCB157	ng/L	2.5	2.5	2.5	2.5
PCB158	ng/L	2.5	2.5	2.5	2.5
PCB167	ng/L	2.5	2.5	2.5	2.5
PCB168+132	ng/L	2.5	2.5	2.5	2.5
PCB169	ng/L	2.5	2.5	2.5	2.5
PCB170	ng/L	2.5	2.5	2.5	2.5
PCB174	ng/L	NA	2.5	2.5	2.5
PCB177	ng/L	2.5	2.5	2.5	2.5
PCB180	ng/L	2.5	2.5	2.5	2.5
PCB183	ng/L	2.5	2.5	2.5	2.5
PCB187	ng/L	2.5	2.5	2.5	2.5
PCB189	ng/L	2.5	2.5	2.5	2.5
PCB194	ng/L	2.5	2.5	2.5	2.5
PCB195	ng/L	2.5	2.5	2.5	2.5
PCB200	ng/L	2.5	2.5	2.5	2.5
PCB201	ng/L	2.5	2.5	2.5	2.5
PCB206	ng/L	2.5	2.5	2.5	2.5
PCB209	ng/L	2.5	2.5	2.5	2.5

Table D.8-4. Analytes Measured at the Chollas Creek Mass Loading Station.

Analyte	Units	Water Quality Benchmarks	Source	1993-1994			1994-1995				1995-1996				1996-1997	
				02/17/94	03/24/94	04/24/94	11/10/94	01/11/95	02/14/95	04/16/95	11/01/95	01/22/96	01/31/96	03/05/96	12/09/96	01/16/97
General / Physical / Organic																
Electrical Conductivity	umhos/cm	NA	2. CCR, 5. Goldbook				447	176.3	110	193	693	179		427	334	487
Oil And Grease	mg/L	10	1 Basin Plan, 3. Anacostia River TMDL, 4. MSGP 2000	2.2	0.6	0.7	1.93	2.11	2.43	1.2	3.3	3.4		3.1	6	1.8
pH	pH scale	6.5-9.0	1. Basin Plan													
Water Temperature	Celcius															
Bacteriological																
Enterococci	MPN/100mL	NA	1. Basin Plan													
Fecal Coliform	MPN/100mL	4000	1. Basin Plan REC-1/REC-2	9,300	24,000	24,000	17,000	28,000	50,000	50,000	16,000	16,000		16,000	16,000	16,000
Total Coliform	MPN/100mL	NA	1. Basin Plan	240,000	240,000	240,000	160,000	160,000	90,000	160,000	16,000			16,000	16,000	16,000
Wet Chemistry																
Ammonia As N	mg/L	(a)	6. U.S. EPA Water Quality Criteria (Freshwater)	0.4		0.9	1.4	0.3	0.7	0.6	0.64	0.31	<0.2	1.8	<0.2	<0.2
Biological Oxygen Demand	mg/L	30	4. MSGP 2000, 8. McNeeley (1979)	10	<3	38.9	30	25	13.3	18.1	14.5	6	<5	16	7.8	15
Chemical Oxygen Demand	mg/L	120	4. MSGP 2000	47		149	284	88	187	192	122	90	87	321	31	73
Dissolved Organic Carbon	mg/L															
Dissolved Phosphorus	mg/L	2	4. MSGP 2000	0.2	0.2	0.4	0.3	0.4	0.4	0.3	0.5	0.6	0.7		0.2	0.3
Nitrate As N	mg/L	10	1. Basin Plan	2.7		1.4	2.7	0.7	1.2	0.98	1.8	1.2	0.91	0.82	0.8	0.81
Nitrite As N	mg/L	1	1. Basin Plan	<0.05		<0.05	<0.05	<0.05	<0.05	<0.05						
Surfactants (MBAS)	mg/L	0.5	1. Basin Plan	0.12	0.47	0.69	0.41	0.07	0.07	0.3	0.16		<0.1	1	<0.1	<0.1
Total Dissolved Solids	mg/L	500 (b)	1. Basin Plan	250	150	270	460	180	250	250	250	264	148	204	194	278
Total Kjeldahl Nitrogen	mg/L	NA		4.3		4.4	3.9	1.6	<1	7.1	3.4	1.9	1.8	2.7	1.1	1.8
Total Organic Carbon	mg/L															
Total Phosphorus	mg/L	2	4. MSGP 2000	0.4	0.7	0.9	0.5	0.6	0.6	0.9	0.7	0.3	0.3	1.1	0.3	0.5
Total Suspended Solids	mg/L	100	4. MSGP 2000, 1. Basin Plan	220	700	400	650	330	1200	470	75	184	92	130	92	488
Turbidity	NTU	20	1. Basin Plan	86	54	54	40	64	85	66	54.2	68.3	5.7	18.4	37	290
Pesticides																
Chlorpyrifos	µg/L	0.02	12. CA Dept. of Fish & Game, 2000													
Diazinon	µg/L	0.072	12. CA Dept. of Fish & Game, 2000, 11. Chollas Creek TMDL for Diazinon, 10. U.S. EPA, Aquatic Life Ambient Water Quality Criteria Diazinon													
Malathion	µg/L	0.43	13. CA Dept. of Fish & Game, 1998, 5. Goldbook													
Hardness																
Total Hardness	mg CaCO3/L			120	71	110	150	58	100	120	91	74.5	52.2	78.6	57.4	61.5
Total Metals																
Antimony	mg/L	NA	1. Basin Plan	<0.001	0.0013	<0.001	0.0023	<0.001	<0.001		0.001				<0.003	<0.003
Arsenic	mg/L	NA	1. Basin Plan	<0.005	<0.005	<0.005	<0.005	0.011	0.008	0.006	0.006				0.004	0.005
Cadmium	mg/L	NA	1. Basin Plan	0.002	0.002	0.001	0.001	0.001	0.002	0.003	0.001				0.0006	0.0007
Chromium	mg/L	NA	1. Basin Plan	0.005	0.006	0.008	0.004	0.003	0.01	0.007	<0.005				<0.010	0.010
Copper	mg/L	NA	1. Basin Plan	0.034	0.029	0.044	0.036	0.017	0.04	0.085	0.046				0.02	0.01
Lead	mg/L	NA		0.11	0.14	0.07	0.035	0.044	0.11	0.14	0.023				0.016	0.058
Nickel	mg/L	NA	1. Basin Plan	0.011	0.008	0.014	0.016	0.006	0.011	0.013	0.011				<0.010	<0.010
Selenium	mg/L	NA	16. 40 CFR 131.38	<0.0005	<0.0005	<0.0005	<0.0005	0.001	0.001		0.002				<0.004	<0.003
Zinc	mg/L	NA	1. Basin Plan	0.26	0.24	0.32	0.18	0.15	0.36	0.56	<0.025				0.07	0.20
Dissolved Metals																
Antimony	mg/L	0.006	1. Basin Plan				0.0022	<0.001	<0.001	<0.001		<0.0015	<0.0015	<0.0015	<0.003	<0.003
Arsenic	mg/L	0.34 (c)	16. 40 CFR 131.38				<0.005	<0.005	<0.005	<0.005		0.004	0.003	0.002	0.005	<0.003
Cadmium	mg/L	(d)	16. 40 CFR 131.38				0.0002	<0.0002	<0.0002	<0.0002		<0.00025	<0.00025	0.00044	0.0005	0.0012
Chromium	mg/L	(d)	16. 40 CFR 131.38				0.002	0.0012	<0.001	0.001		<0.005	<0.005	<0.005	<0.010	<0.010
Copper	mg/L	(d)	16. 40 CFR 131.38				0.013	<0.005	0.005	0.010		0.012	0.008	0.034	0.01	0.02
Lead	mg/L	(d)	16. 40 CFR 131.38				0.003	<0.001	<0.001	<0.001		0.002	0.002	0.018	0.015	0.007
Nickel	mg/L	(d)	16. 40 CFR 131.38				0.013	<0.005	<0.005	<0.005		<0.005	<0.005	0.009	<0.010	0.020
Selenium	mg/L	NA	16. 40 CFR 131.38				<0.0005	0.001	<0.0005	<0.0005		<0.001	<0.001	<0.001	<0.002	<0.003
Zinc	mg/L	(d)	16. 40 CFR 131.38				0.07	0.014	0.012	0.069		<0.025	0.032	0.141	0.08	0.040
Toxicity																
<i>Ceriodaphnia</i> 96-hr	NOEC (%)	100														
<i>Ceriodaphnia</i> 7-day survival	NOEC (%)	100														
<i>Ceriodaphnia</i> 7-day reproduction	NOEC (%)	100														
<i>Hyalella</i> 96-hr	NOEC (%)	100														
<i>Selenastrum</i> 96-hr	NOEC (%)	100														

See last page for footnotes and source references.

Table D.8-4. Analytes Measured at the Chollas Creek Mass Loading Station.

Analyte	Units	Water Quality Benchmarks	Source	1997-1998			1998-1999			1999-2000			2000-2001			2001-2002			
				11/10/97	12/06/97	03/14/98	11/08/98	01/25/99	03/15/99	02/12/00	03/05/00	04/17/00	10/27/00	01/08/01	02/13/01	11/29/01	02/17/02	03/08/02	
General / Physical / Organic																			
Electrical Conductivity	umhos/cm	NA	2. CCR, 5. Goldbook	310	155	1146	286	270	215	186	187	185	258	319	279	155	310	242	
Oil And Grease	mg/L	10	1 Basin Plan, 3. Anacostia River TMDL, 4. MSGP 2000	6.9	<0.5	4.56	1.29	1.56	0.95	1.92	2.04	1.48	12	4	1	5	10	8	
pH	pH scale	6.5-9.0	1. Basin Plan													7.4	7.4	8	
Water Temperature	Celcius																		
Bacteriological																			
Enterococci	MPN/100mL	NA	1. Basin Plan										130,000	26,000	80,000	170,000	110,000	220,000	
Fecal Coliform	MPN/100mL	4000	1. Basin Plan REC-1/REC-2	16,000	9,450		1,600	1,600	1,600	<2	1,600	1,600	70,000	27,000	14,000	30,000	23,000	70,000	
Total Coliform	MPN/100mL	NA	1. Basin Plan	160,000	20,000		241,900	298,700	2,419,000	500	1,600	1,600	1,100,000	500,000	30,000	80,000	300,000	300,000	
Wet Chemistry																			
Ammonia As N	mg/L	(a)	6. U.S. EPA Water Quality Criteria (Freshwater)	1.3	0.4	10	1	0.78	1.06	1.65	<0.1	0.21	1.2	1.5	0.6	0.7	2.14	1.04	
Biological Oxygen Demand	mg/L	30	4. MSGP 2000, 8. McNeeley (1979)	49	24	40	19	6	11	7.8	2.54	6.1	15	32.2	<2	27	73.3	29	
Chemical Oxygen Demand	mg/L	120	4. MSGP 2000	146	44	135	59	41	85	41	104	57	150	109	100	71	244	488	
Dissolved Organic Carbon	mg/L																		
Dissolved Phosphorus	mg/L	2	4. MSGP 2000	0.4	<0.1	1.41	1.07	0.27	0.22	0.33	0.26	0.22	0.08	0.94	0.39	0.9	0.75	0.46	
Nitrate As N	mg/L	10	1. Basin Plan	3.5	0.52	0.4	1.1	0.98	0.44	3.22	1.04	3.1	0.8	2.1	0.8	1.2	1.6	1.3	
Nitrite As N	mg/L	1	1. Basin Plan		0.08	<0.05	0.06	0.12	0.14	0.086	<0.05	<0.05	0.21	0.22	0.05	0.11	0.22	0.18	
Surfactants (MBAS)	mg/L	0.5	1. Basin Plan	<0.1	0.07	0.66	0.48	0.19	0.07	0.35	0.22	0.13	0.7	<0.5	<0.5	<0.5	0.7	<0.5	
Total Dissolved Solids	mg/L	500 (b)	1. Basin Plan	374	250	344	249	125	222	120	111	140	191	236	173	71	254	199	
Total Kjeldahl Nitrogen	mg/L	NA		1.6	<1	15	0.44	1.25	3.61	2.98	3.1	2.36	2.37	5.9	0.97	4.6	5.7	9.1	
Total Organic Carbon	mg/L																		
Total Phosphorus	mg/L	2	4. MSGP 2000	0.7	<0.1	2.2	1.28	0.3	0.17	0.46	0.33	0.6	0.12	0.96	0.49	1.08	1.55	2.08	
Total Suspended Solids	mg/L	100	4. MSGP 2000, 1. Basin Plan	182	315	805	7.58	280	159	457	62	200	67	294	139	67	151	493	
Turbidity	NTU	20	1. Basin Plan	90	29	24	69	38	21	50	27	38	72.2	200	96	63.3	36.5	121	
Pesticides																			
Chlorpyrifos	µg/L	0.02	12. CA Dept. of Fish & Game, 2000				0.1			<0.5*	<0.5*	<0.5*	<0.5*	<0.5*	<0.5*	<0.5*	0.04	0.13	0.04
Diazinon	µg/L	0.072	12. CA Dept. of Fish & Game, 2000, 11. Chollas Creek TMDL for Diazinon, 10. U.S. EPA, Aquatic Life Ambient Water Quality Criteria Diazinon				0.46	0.46	0.53	<0.5*	<0.5*	<0.5*	0.75	<0.5*	<0.5*	0.68	0.82	0.61	
Malathion	µg/L	0.43	13. CA Dept. of Fish & Game, 1998, 5. Goldbook																
Hardness																			
Total Hardness	mg CaCO3/L			116	39	96.4	77	42.5	90.8	40.9	35.1	45.5	85	78	59	68	111	148	
Total Metals																			
Antimony	mg/L	NA	1. Basin Plan	0.0016	<32*	<32*	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	0.003	0.003	0.002	<0.002	0.003	0.005	
Arsenic	mg/L	NA	1. Basin Plan	0.002	<0.053*	<0.053*	0.006	0.0018	0.003	<0.001	0.007	0.005	0.004	0.006	0.004	0.002	0.004	0.006	
Cadmium	mg/L	NA	1. Basin Plan	0.0003	<0.004	<0.004	0.002	<0.00025	<0.00025	<0.00025	0.002	<0.00025	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	
Chromium	mg/L	NA	1. Basin Plan	<0.005	<0.007	0.011	<0.005	0.015	0.035	<0.005	<0.005	<0.005	0.007	0.013	0.007	0.012	0.009	0.019	
Copper	mg/L	NA	1. Basin Plan	0.017	0.028	0.028	0.006	<0.005	0.015	0.029	0.016	0.014	0.027	0.049	0.016	0.027	0.053	0.056	
Lead	mg/L	NA		0.003	<0.042	0.095	<0.001	0.007	0.082	0.015	<0.001	<0.005	0.022	0.055	0.027	0.028	0.032	0.061	
Nickel	mg/L	NA	1. Basin Plan	0.009	<0.015	<0.015	0.04	0.028	0.016	<0.005	<0.005	<0.005	0.012	0.014	0.005	0.009	0.015	0.017	
Selenium	mg/L	NA	16. 40 CFR 131.38	0.001	<0.075*	<0.075*	0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	0.003	<0.002	<0.002	<0.002	<0.002	
Zinc	mg/L	NA	1. Basin Plan	0.176	0.11	0.092	0.03	0.048	0.21	0.096	0.05	0.08	0.150	0.290	0.12	0.162	0.314	0.430	
Dissolved Metals																			
Antimony	mg/L	0.006	1. Basin Plan							<0.0015	<0.0015	<0.0015	0.004	<0.002	<0.002	<0.002	<0.002	<0.002	
Arsenic	mg/L	0.34 (c)	16. 40 CFR 131.38							<0.001	0.005	<0.001	0.003	0.002	0.003	<0.001	<0.001	0.003	
Cadmium	mg/L	(d)	16. 40 CFR 131.38							<0.00025	<0.00025	<0.00025	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	
Chromium	mg/L	(d)	16. 40 CFR 131.38							<0.005	<0.005	<0.005	0.005	<0.005	<0.005	0.005	<0.005	<0.005	
Copper	mg/L	(d)	16. 40 CFR 131.38							<0.005	<0.005	<0.005	0.017	0.013	<0.005	0.009	0.024	0.018	
Lead	mg/L	(d)	16. 40 CFR 131.38							<0.001	<0.001	<0.005	0.003	0.002	0.014	<0.002	<0.002	0.002	
Nickel	mg/L	(d)	16. 40 CFR 131.38							<0.005	<0.005	<0.005	0.011	0.007	0.002	0.004	0.010	0.008	
Selenium	mg/L	NA	16. 40 CFR 131.38							<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	
Zinc	mg/L	(d)	16. 40 CFR 131.38							0.019	0.028	0.008	0.090	0.110	0.030	0.053	0.118	0.079	
Toxicity																			
<i>Ceriodaphnia</i> 96-hr	NOEC (%)	100											50	25	100	50	25	50	
<i>Ceriodaphnia</i> 7-day survival	NOEC (%)	100											50	25	100	25	25	25	
<i>Ceriodaphnia</i> 7-day reproduction	NOEC (%)	100											25	25	100	25	12.5	25	
<i>Hyalella</i> 96-hr	NOEC (%)	100											50	<6.25	12.5	100	50	50	
<i>Selenastrum</i> 96-hr	NOEC (%)	100													100	100	100		

See last page for footnotes and source references.

Table D.8-4. Analytes Measured at the Chollas Creek Mass Loading Station.

Analyte	Units	Water Quality Benchmarks	Source	2002-2003			2003-2004			2004-2005			2005-2006			2006-2007		
				11/08/02	02/11/03	02/25/03	02/03/04	02/18/04	03/02/04	10/17/04	02/11/05	02/18/05	10/18/05	01/02/06	02/19/06	10/14/06	12/10/06	2/19/07
General / Physical / Organic																		
Electrical Conductivity	umhos/cm	NA	2. CCR, 5. Goldbook	315	211	91.2	152.5	148	231	565	348	159	444	228	184.9	510	319	239
Oil And Grease	mg/L	10	1 Basin Plan, 3. Anacostia River TMDL, 4. MSGP 2000	4.24	3.54	2.47	1.61	2.17	3.43	4.17	1.12	<1	<1	1.19	<1	<5	<5	<5
pH	pH scale	6.5-9.0	1. Basin Plan	6.96	7.58	7.41	4.05	6.57	6.96	7.09	7.61	7.81	7.55	8.17	7.76	7.65	8.09	8.40
Water Temperature	Celcius			17	16.6	13.3	12.70	15.40	13.10	19.40	14.30	13.40	19.60	16.20	11.70	17.90	14.30	13.70
Bacteriological																		
Enterococci	MPN/100mL	NA	1. Basin Plan	30,000	50,000	80,000	50,000	220,000	17,000	170,000	30,000	80,000	800,000	170,000	23,000	500,000	50,000	80,000
Fecal Coliform	MPN/100mL	4000	1. Basin Plan REC-1/REC-2	50,000	30,000	13,000	22,000	30,000	17,000	140,000	11,000	70,000	500,000	70,000	8,000	110,000	23,000	3,000
Total Coliform	MPN/100mL	NA	1. Basin Plan	2,400,000	230,000	300,000	110,000	80,000	800,000	3,000,000	130,000	170,000	800,000	2,400,000	170,000	280,000	90,000	130,000
Wet Chemistry																		
Ammonia As N	mg/L	(a)	6. U.S. EPA Water Quality Criteria (Freshwater)	0.54	0.79	0.52	0.52	0.58	3.1	2.13	0.28	0.19	1.41	0.67	0.58	1.64	2.12	1.53
Biological Oxygen Demand	mg/L	30	4. MSGP 2000, 8. McNeeley (1979)	8.01	31.8	21.0	41.4	2.25	34.6	138	4.83	3.79	49.5	21	4.26	17.3	25.2	31.2
Chemical Oxygen Demand	mg/L	120	4. MSGP 2000	119	184	43	222	271	69	501	89	<25	168	65	106	447	266	94
Dissolved Organic Carbon	mg/L			11.3	19.2	10.8	5.8	11.6	6.07	134	2.22	2.86	32.3	18	17	47.9	29.7	9.67
Dissolved Phosphorus	mg/L	2	4. MSGP 2000	0.41	0.40	0.14	0.51	0.32	0.21	1.68	0.2	<0.05	0.68	0.44	0.38	0.88	0.64	0.32
Nitrate As N	mg/L	10	1. Basin Plan	0.71	1.04	0.45	0.83	0.79	0.37	4.38	0.62	0.61	3.09	1.09	0.98	2.4	0.27	<0.05
Nitrite As N	mg/L	1	1. Basin Plan	0.09	0.12	0.07	0.06	0.08	<0.05	0.15	0.05	0.05	0.18	0.09	0.06	0.1	0.06	0.07
Surfactants (MBAS)	mg/L	0.5	1. Basin Plan	0.3	0.2	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	<0.5	<0.5	0.5	<0.5	<0.5
Total Dissolved Solids	mg/L	500 (b)	1. Basin Plan	195	121	87	134	222	129	665	122	112	396	210	104	210	210	104
Total Kjeldahl Nitrogen	mg/L	NA		2.5	2.4	1.6	3	3.6	3.8	18.6	5.4	3.4	6.2	1.6	2.6	4.2	4.5	3.7
Total Organic Carbon	mg/L			22.8	27.0	5.45	21.9	20.9	15.9	190	7.58	10.7	73	9.74	22.4	64	33.3	11.3
Total Phosphorus	mg/L	2	4. MSGP 2000	0.68	0.67	0.76	0.91	0.63	0.45	1.85	0.3	0.45	0.91	0.74	0.65	1.22	1.24	0.61
Total Suspended Solids	mg/L	100	4. MSGP 2000, 1. Basin Plan	63	193	295	24	290	56	753	135	275	214	252	386	438	418	239
Turbidity	NTU	20	1. Basin Plan	57.1	121	178	259	102	37.5	300	40.1	82.2	46.8	64.7	80.2	168	129	123
Pesticides																		
Chlorpyrifos	µg/L	0.02	12. CA Dept. of Fish & Game, 2000	0.111	<0.03*	0.038	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.002	<0.002	<0.002
Diazinon	µg/L	0.072	12. CA Dept. of Fish & Game, 2000, 11. Chollas Creek TMDL for Diazinon, 10. U.S. EPA, Aquatic Life Ambient Water Quality Criteria Diazinon	0.424	0.26	0.09	0.081	0.158	0.088	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	0.100	<0.004	<0.004
Malathion	µg/L	0.43	13. CA Dept. of Fish & Game, 1998, 5. Goldbook	0.25	0.28	<0.10	0.164	0.162	0.168	0.601	0.091	0.065	0.461	0.205	0.074	0.949	0.270	0.095
Hardness																		
Total Hardness	mg CaCO3/L			69.1	78	44	87	88	74	244	40	46	170	101	<100	89	101	60
Total Metals																		
Antimony	mg/L	NA	1. Basin Plan	<0.002	0.005	0.004	<0.005	<0.006	<0.005	0.005	<0.005	<0.005	<0.005	0.008	<0.005	0.005	0.005	0.004
Arsenic	mg/L	NA	1. Basin Plan	0.003	0.004	0.003	0.009	0.006	0.003	0.007	0.004	<0.002	0.005	0.006	<0.001	0.012	<0.001	0.002
Cadmium	mg/L	NA	1. Basin Plan	<0.001	<0.001	<0.001	0.001	0.002	0.001	0.003	<0.001	<0.001	0.001	0.001	<0.001	0.003	0.007	<0.001
Chromium	mg/L	NA	1. Basin Plan	<0.005	0.010	<0.005	0.025	0.019	<0.005	<0.005	<0.005	<0.005	<0.005	0.017	<0.005	0.011	0.02	0.011
Copper	mg/L	NA	1. Basin Plan	0.028	0.033	0.016	0.07	0.068	0.036	0.122	0.009	0.015	0.062	0.065	0.027	0.071	0.115	0.04
Lead	mg/L	NA		0.017	0.029	0.023	0.079	0.096	0.057	0.079	0.008	0.018	0.032	0.064	0.024	0.072	0.071	0.034
Nickel	mg/L	NA	1. Basin Plan	0.007	0.008	0.004	0.016	0.014	0.002	0.040	0.003	0.003	0.019	0.016	0.005	0.017	0.021	0.009
Selenium	mg/L	NA	16. 40 CFR 131.38	<0.004	<0.004	<0.004	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.004	<0.005	<0.004	<0.004	<0.004
Zinc	mg/L	NA	1. Basin Plan	0.118	0.230	0.154	0.496	0.561	0.394	1.18	0.054	0.100	0.421	0.402	0.181	0.515	0.659	0.233
Dissolved Metals																		
Antimony	mg/L	0.006	1. Basin Plan	0.002	0.002	0.002	<0.005	<0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.002	<0.002	0.003
Arsenic	mg/L	0.34 (c)	16. 40 CFR 131.38	0.003	0.002	0.002	0.002	0.002	<0.002	<0.002	<0.002	<0.002	0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cadmium	mg/L	(d)	16. 40 CFR 131.38	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Chromium	mg/L	(d)	16. 40 CFR 131.38	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	mg/L	(d)	16. 40 CFR 131.38	0.022	0.052	0.008	0.005	0.009	0.005	0.024	0.006	<0.005	0.024	0.008	0.012	0.014	0.014	0.007
Lead	mg/L	(d)	16. 40 CFR 131.38	0.006	<0.002	<0.002	<0.002	<0.002	<0.002	0.004	<0.002	<0.002	0.003	<0.002	<0.002	0.004	0.002	<0.001
Nickel	mg/L	(d)	16. 40 CFR 131.38	0.006	0.004	<0.002	<0.002	0.002	<0.002	0.027	<0.002	<0.002	0.01	0.003	0.003	0.007	0.006	0.002
Selenium	mg/L	NA	16. 40 CFR 131.38	<0.004	<0.004	<0.004	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.004	<0.005	<0.004	<0.004	<0.004
Zinc	mg/L	(d)	16. 40 CFR 131.38	0.152	0.139	0.018	<0.02	0.034	<0.02	0.267	0.023	<0.02	0.193	0.032	0.049	0.092	0.072	0.021
Toxicity																		
<i>Ceriodaphnia</i> 96-hr	NOEC (%)	100		50	100	100	100	100	100	100	100	100	100	100	100	100	100	100
<i>Ceriodaphnia</i> 7-day survival	NOEC (%)	100		25	50	100	100	100	100	100	100	100	100	100	100	50	100	100
<i>Ceriodaphnia</i> 7-day reproduction	NOEC (%)	100		50	100	100	100	100	100	25	100	100	50	100	100	100	100	100
<i>Hyalella</i> 96-hr	NOEC (%)	100		50	100	100	50	50	100	50	100	100	25	50	25	6.25	25	25
<i>Selenastrum</i> 96-hr	NOEC (%)	100		100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

See last page for footnotes and source references.

Table D.8-4. Analytes Measured at the Chollas Creek Mass Loading Station.

Analyte	Units	Water Quality Benchmarks	Source	2007-2008		Frequency Above Benchmarks	Mean Ratio to Benchmarks
				11/30/07	2/3/08		
General / Physical / Organic							
Electrical Conductivity	umhos/cm	NA	2. CCR, 5. Goldbook	162	143.1		
Oil And Grease	mg/L	10	1 Basin Plan, 3. Anacostia River TMDL, 4. MSGP 2000	18.7	2.8J	4%	0.32
pH	pH scale	6.5-9.0	1. Basin Plan	6.83	7.59	5%	0.06
Water Temperature	Celcius			17.10	13.20		
Bacteriological							
Enterococci	MPN/100mL	NA	1. Basin Plan	80,000	80,000		
Fecal Coliform	MPN/100mL	4000	1. Basin Plan REC-1/REC-2	50,000	11,000	80%	9.49
Total Coliform	MPN/100mL	NA	1. Basin Plan	500,000	70,000		
Wet Chemistry							
Ammonia As N	mg/L	(a)	6. U.S. EPA Water Quality Criteria (Freshwater)	0.94	0.13	0%	0.08
Biological Oxygen Demand	mg/L	30	4. MSGP 2000, 8. McNeeley (1979)	27	4.3	24%	0.75
Chemical Oxygen Demand	mg/L	120	4. MSGP 2000	91	26	40%	1.17
Dissolved Organic Carbon	mg/L			18.2	5.4		
Dissolved Phosphorus	mg/L	2	4. MSGP 2000	0.68	0.22	0%	0.23
Nitrate As N	mg/L	10	1. Basin Plan	1.3	0.28	0%	0.13
Nitrite As N	mg/L	1	1. Basin Plan	0.12	<0.03	0%	0.07
Surfactants (MBAS)	mg/L	0.5	1. Basin Plan	0.68	0.14	13%	0.57
Total Dissolved Solids	mg/L	500 (b)	1. Basin Plan	184	184	2%	0.43
Total Kjeldahl Nitrogen	mg/L	NA		5.7	1.3		
Total Organic Carbon	mg/L			20.4	5.8		
Total Phosphorus	mg/L	2	4. MSGP 2000	0.61	0.37	4%	0.37
Total Suspended Solids	mg/L	100	4. MSGP 2000, 1. Basin Plan	400	124	78%	2.95
Turbidity	NTU	20	1. Basin Plan	129	59.7	96%	4.31
Pesticides							
Chlorpyrifos	µg/L	0.02	12. CA Dept. of Fish & Game, 2000	<0.002	<0.002	29%	2.53
Diazinon	µg/L	0.072	12. CA Dept. of Fish & Game, 2000, 11. Chollas Creek TMDL for Diazinon, 10. U.S. EPA, Aquatic Life Ambient Water Quality Criteria Diazinon	0.047	0.013	42%	2.10
Malathion	µg/L	0.43	13. CA Dept. of Fish & Game, 1998, 5. Goldbook	<0.006	0.043	18%	0.54
Hardness							
Total Hardness	mg CaCO3/L			22.4	17.2		
Total Metals							
Antimony	mg/L	NA	1. Basin Plan	0.0024	0.0013		
Arsenic	mg/L	NA	1. Basin Plan	0.0036	0.0032		
Cadmium	mg/L	NA	1. Basin Plan	0.0008	0.0008		
Chromium	mg/L	NA	1. Basin Plan	0.0058	0.0028		
Copper	mg/L	NA	1. Basin Plan	0.075	0.032		
Lead	mg/L	NA		0.050	0.044		
Nickel	mg/L	NA	1. Basin Plan	0.0103	0.008		
Selenium	mg/L	NA	16. 40 CFR 131.38	0.0003J	0.0002J		
Zinc	mg/L	NA	1. Basin Plan	0.49	0.45		
Dissolved Metals							
Antimony	mg/L	0.006	1. Basin Plan	0.0002	0.0011		
Arsenic	mg/L	0.34 (c)	16. 40 CFR 131.38	0.0025	0.0022	0%	0.01
Cadmium	mg/L	(d)	16. 40 CFR 131.38	<0.0004	<0.0004	0%	0.12
Chromium	mg/L	(d)	16. 40 CFR 131.38	0.0012	0.0009	0%	0.01
Copper	mg/L	(d)	16. 40 CFR 131.38	0.0111	0.0066	49%	1.21
Lead	mg/L	(d)	16. 40 CFR 131.38	0.0015	0.0004	0%	0.07
Nickel	mg/L	(d)	16. 40 CFR 131.38	0.0038	0.0015	0%	0.01
Selenium	mg/L	NA	16. 40 CFR 131.38	0.0003J	0.0002J	0%	0.01
Zinc	mg/L	(d)	16. 40 CFR 131.38	0.078	0.0376	26%	0.66
Toxicity							
<i>Ceriodaphnia</i> 96-hr	NOEC (%)	100		100	100	26%	1.43
<i>Ceriodaphnia</i> 7-day survival	NOEC (%)	100		100	100	35%	1.78
<i>Ceriodaphnia</i> 7-day reproduction	NOEC (%)	100		100	100	33%	2.00
<i>Hyalella</i> 96-hr	NOEC (%)	100		12.5	6.25	74%	4.43
<i>Selenastrum</i> 96-hr	NOEC (%)	100		100	100	0%	1.00

See last page for footnotes and source references.

Table D.8-4. Analytes Measured at the Chollas Creek Mass Loading Station.

Blank spaces have been verified and no data is available due to changes in the monitoring program.

(a) Water Quality Benchmark is based on CMC (salmonids absent) using pH described in the U.S. EPA, 1999 Update of Ambient Water Quality Criteria for Ammonia, EPA-822-R-99-014, December 1999.

(b) Water Quality Benchmark for total dissolved solids is based on the San Diego Regional Water Quality Control Plan by watershed for the San Diego Region (Basin Plan), 1994 (with amendments effective prior to April 25, 2007).

(c) Water Quality Benchmark for dissolved metal fractions are based on a default water effects ratios (WER) value of 1 and are calculated as described by the USEPA Federal Register Doc. 40 CFR Part 131, May 18, 2000.

(d) Water Quality Benchmark for dissolved metal fractions are based on total hardness and are calculated as described by the USEPA Federal Register Doc. 40 CFR Part 131, May 18, 2000. The Criteria Maximum Concentration (CMC) was used.

NA indicate no criteria or published value was available or applicable to the matrix or program.

Shaded text – exceeds water quality benchmark. Underlined results are above the **CMC** water quality benchmark.

* Indicates detection limit above water quality benchmark.

Sources

Please refer to the San Diego County Copermittee Regional Monitoring Program Benchmark Sources for benchmark source citations.

Table D.9-1. Analytes Measured at the Sweetwater Mass Loading Station.

Analyte	Units	Water Quality Benchmarks	Source	2001-2002			2002-2003			2003-2004			2004-2005			2005-2006		
				02/17/02	03/17/02	04/25/02	12/16/02	02/11/03	02/25/03	11/12/03	02/03/04	02/18/04	10/17/04	02/11/05	02/18/05	10/18/05	01/02/06	02/19/06
General / Physical / Organic																		
Electrical Conductivity	umhos/cm	NA	2. CCR, 5. Goldbook	3820	3430	2980	2990	2760	1955	3040	1742	1995	529	5070	3260	3430	4090	2690
Oil And Grease	mg/L	10	1. Basin Plan, 3. Anacostia River TMDL, 4. MSGP 2000	1	1	1	4.47	2	1	4.43	<1	1.05	<1	<1	<1	<1	<1	<1
pH	pH Units	6.5-9.0	1. Basin Plan	7.5	7.4	7.3	7.56	6.87	6.94	7.20	7.83	7.58	7.24	7.52	7.49	7.66	8.14	8.09
Water Temperature	Celcius						14.30	17.00	14.40	14.90	12.20	15.40	19.30	14.60	14.00	16.50	15.20	12.20
Bacteriological																		
Enterococci	MPN/100 mL	NA	1. Basin Plan	300	16,000	9,000	8,000	14,000	30,000	18,792	1,879	17,000	800	3,000	50,000	50,000	5,000	13,000
Fecal Coliform	MPN/100 mL	400	1. Basin Plan REC-1/REC-2	130	500	11,000	23,000	7,000	1,700	4,000	2,200	2,300	300	1,300	1,300	3,000	8,000	2,300
Total Coliform	MPN/100 mL	NA	1. Basin Plan	23,000	5,000	230,000	30,000	30,000	170,000	300,000	130,000	130,000	30,000	13,000	28,000	130,000	30,000	80,000
Wet Chemistry																		
Ammonia As N	mg/L	(a)	6. U.S. EPA Water Quality Criteria (Freshwater)	0.16	0.3	0.2	0.25	0.28	0.19	0.16	0.1	0.15	0.39	0.14	0.14	<0.1	<0.1	0.19
Biochemical Oxygen Demand	mg/L	30	4. MSGP 2000, 8. McNeeley (1979)	2	14.2	4.7	<2.0	20.4	5.89	9.32	46.7	15.3	19.8	2.57	3.42	4.96	3.72	2.22
Chemical Oxygen Demand	mg/L	120	4. MSGP 2000	70	63	55	59	85	39	104	69	86	44	123	74	47	44	102
Dissolved Organic Carbon	mg/L						9.68	25.2	8.94	21.9	7.94	88.2	25.7	5.24	6.19	5.04	19	10.5
Dissolved Phosphorus	mg/L	2	4. MSGP 2000	<0.05	0.2	0.1	0.34	0.20	0.10	0.4	0.18	0.12	0.2	0.18	0.45	0.26	0.43	0.24
Nitrate As N	mg/L	10	1. Basin Plan	0.4	0.3	0.2	0.54	0.81	0.39	2.19	0.25	0.27	0.07	1.02	1.93	0.55	1.52	1.44
Nitrite As N	mg/L	1	1. Basin Plan	<0.05	<0.05	<0.05	0.06	<0.05	<0.05	0.08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Surfactants (MBAS)	mg/L	0.5	1. Basin Plan	<0.5	<0.5	<0.5	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Total Dissolved Solids	mg/L	1500 (b)	1. Basin Plan	2000	1050	2870	793	1660	1150	1880	1780	2230	2860	2370	1410	2640	2140	2070
Total Kjeldahl Nitrogen	mg/L	NA		1.5	3	1.2	1.0	1.0	0.8	2.8	<0.5	0.7	2.1	1.4	1.8	1	1.7	2.5
Total Organic Carbon	mg/L						40.7	12.9	6.72	20.8	12.5	96.4	30.1	10.9	11.7	12.1	14	13.2
Total Phosphorus	mg/L	2	4. MSGP 2000	0.18	0.29	0.1	0.54	0.22	0.14	0.43	0.22	0.16	0.25	0.57	0.47	0.52	0.45	0.54
Total Suspended Solids	mg/L	100	4. MSGP 2000, 1. Basin Plan	21	47	23	74	14	51	<20	<20	<20	20	26	102	<20	<20	<20
Turbidity	NTU	20	1. Basin Plan	7.7	20.2	8.24	62.9	13	46.5	15.2	11.5	16.8	4.03	5.8	48.8	11.4	9.07	21.7
Pesticides																		
Chlorpyrifos	µg/L	0.02	12. CA Dept. of Fish & Game, 2000	<0.03*	<0.03*	0.03	0.053	0.059	<0.03*	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02
Diazinon	µg/L	0.08	12. CA Dept. of Fish & Game, 2000, 11. Chollas Creek TMDL for Diazinon, 10. U.S. EPA, Aquatic Life Ambient Water Quality Criteria Diazinon	0.10	0.27	<0.03	0.301	0.146	0.171	0.084	<0.01	0.026	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02
Malathion	µg/L	0.43	13. CA Dept. of Fish & Game, 1998, 5. Goldbook				0.24	<0.10	<0.10	0.423	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02
Hardness																		
Total Hardness	mg CaCO3/L			932	499	1010	344	758	549	817	728	816	1210	991	556	1130	1020	966
Total Metals																		
Antimony	mg/L	NA	1. Basin Plan	<0.002	<0.002	<0.002	0.004	0.004	0.003	<0.005	<0.005	<0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Arsenic	mg/L	NA	1. Basin Plan	0.002	0.002	0.003	0.004	0.002	0.003	0.005	0.007	0.005	0.004	0.005	<0.002	0.008	0.005	0.005
Cadmium	mg/L	NA	1. Basin Plan	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Chromium	mg/L	NA	1. Basin Plan	<0.005	0.007	<0.005	0.009	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	mg/L	NA	1. Basin Plan	<0.005	0.010	0.006	0.010	0.018	0.007	0.009	0.013	0.012	<0.005	<0.005	0.005	<0.005	0.005	0.005
Lead	mg/L	NA		0.002	0.006	0.003	0.010	0.003	<0.002	0.002	<0.002	0.003	<0.002	<0.002	0.002	<0.002	<0.002	<0.002
Nickel	mg/L	NA	1. Basin Plan	0.003	0.003	0.004	<0.002	0.002	<0.002	0.004	0.002	<0.002	0.002	0.003	0.002	0.007	0.004	0.003
Selenium	mg/L	NA	16. 40 CFR 131.38	0.003	<0.002	<0.002	<0.004	<0.004	<0.004	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.004	<0.005
Zinc	mg/L	NA	1. Basin Plan	<0.02	0.045	<0.020	0.042	0.029	0.025	0.036	<0.02	0.029	<0.02	<0.02	<0.02	0.044	<0.02	<0.02
Dissolved Metals																		
Antimony	mg/L	0.006	1. Basin Plan	<0.002	<0.002	<0.002	0.006	<0.002	0.004	<0.005	<0.005	<0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Arsenic	mg/L	0.34 (c)	16. 40 CFR 131.38	<0.001	0.001	0.003	0.003	0.003	0.003	0.004	0.003	0.003	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001
Cadmium	mg/L	(d)	16. 40 CFR 131.38	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Chromium	mg/L	(d)	16. 40 CFR 131.38	<0.005	<0.005	<0.005	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	mg/L	(d)	16. 40 CFR 131.38	<0.005	<0.005	<0.005	0.007	0.025	0.008	0.005	0.006	0.008	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Lead	mg/L	(d)	16. 40 CFR 131.38	<0.002	<0.002	<0.002	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Nickel	mg/L	(d)	16. 40 CFR 131.38	0.004	<0.002	0.003	<0.002	0.002	<0.002	0.003	0.002	<0.002	0.002	0.003	0.002	<0.002	0.004	0.003
Selenium	mg/L	NA	16. 40 CFR 131.38	<0.002	<0.002	<0.002	<0.004	<0.004	<0.004	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.004	<0.005
Zinc	mg/L	(d)	16. 40 CFR 131.38	<0.020	<0.020	<0.020	0.043	0.097	0.021	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.04	<0.02	<0.02
Toxicity																		
<i>Ceriodaphnia</i> 96-hr	NOEC (%)	100		100	50	100	50	100	100	100	100	100	50	100	100	100	100	100
<i>Ceriodaphnia</i> 7-day survival	NOEC (%)	100		100	25	100	50	100	100	100	100	100	25	100	100	100	100	100
<i>Ceriodaphnia</i> 7-day reproduction	NOEC (%)	100		100	50	50	50	100	100	100	100	100	12.5	50	100	100	100	100
<i>Hyalella</i> 96-hr	NOEC (%)	100		100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
<i>Selenastrum</i> 96-hr	NOEC (%)	100		50	50	25	12.5	100	100	100	100	50	50	100	100	50	100	100

See last page for footnotes and source references.

Table D.9-1. Analytes Measured at the Sweetwater Mass Loading Station.

Analyte	Units	Water Quality Benchmarks	Source	2006-2007			Frequency Above Benchmarks	Mean Ratio to Benchmarks
				10/14/06	1/30/07	2/19/07		
General / Physical / Organic								
Electrical Conductivity	umhos/cm	NA	2. CCR, 5. Goldbook	1890	4100	3520		
Oil And Grease	mg/L	10	1. Basin Plan, 3. Anacostia River TMDL, 4. MSGP 2000	<5	<5	<5	0%	0.15
pH	pH Units	6.5-9.0	1. Basin Plan	7.8	7.79	7.60	0%	0.00
Water Temperature	Celcius			16.10	11.10	13.10		
Bacteriological								
Enterococci	MPN/100 mL	NA	1. Basin Plan	110,000	3,000	1,300		
Fecal Coliform	MPN/100 mL	400	1. Basin Plan REC-1/REC-2	8,000	170	5,000	83%	11.28
Total Coliform	MPN/100 mL	NA	1. Basin Plan	50,000	3,000	30,000		
Wet Chemistry								
Ammonia As N	mg/L	(a)	6. U.S. EPA Water Quality Criteria (Freshwater)	0.79	0.67	1.24	0%	0.02
Biochemical Oxygen Demand	mg/L	30	4. MSGP 2000, 8. McNeeley (1979)	115	3.66	3.36	11%	0.52
Chemical Oxygen Demand	mg/L	120	4. MSGP 2000	119	54	45	6%	0.59
Dissolved Organic Carbon	mg/L			86.9	13.6	12.8		
Dissolved Phosphorus	mg/L	2	4. MSGP 2000	0.28	0.21	0.32	0%	0.12
Nitrate As N	mg/L	10	1. Basin Plan	1.36	<0.05	0.74	0%	0.08
Nitrite As N	mg/L	1	1. Basin Plan	0.06	<0.05	<0.05	0%	0.03
Surfactants (MBAS)	mg/L	0.5	1. Basin Plan	<0.5	<0.5	<0.5	0%	0.43
Total Dissolved Solids	mg/L	1500 (b)	1. Basin Plan	1990	2060	1290	72%	1.27
Total Kjeldahl Nitrogen	mg/L	NA		2.2	1.4	2.4		
Total Organic Carbon	mg/L			88.8	13.8	13		
Total Phosphorus	mg/L	2	4. MSGP 2000	0.4	0.28	0.39	0%	0.17
Total Suspended Solids	mg/L	100	4. MSGP 2000, 1. Basin Plan	45	<20	91	6%	0.32
Turbidity	NTU	20	1. Basin Plan	32.2	9.6	65.8	39%	1.14
Pesticides								
Chlorpyrifos	µg/L	0.02	12. CA Dept. of Fish & Game, 2000	<0.002	<0.002	<0.002	20%	0.66
Diazinon	µg/L	0.08	12. CA Dept. of Fish & Game, 2000, 11. Chollas Creek TMDL for Diazinon, 10. U.S. EPA, Aquatic Life Ambient Water Quality Criteria Diazinon	<0.004	<0.004	<0.004	33%	0.80
Malathion	µg/L	0.43	13. CA Dept. of Fish & Game, 1998, 5. Goldbook	0.097	0.063	<0.006	0%	0.15
Hardness								
Total Hardness	mg CaCO3/L			807	999	626		
Total Metals								
Antimony	mg/L	NA	1. Basin Plan	0.002	0.002	0.004		
Arsenic	mg/L	NA	1. Basin Plan	0.011	0.002	0.003		
Cadmium	mg/L	NA	1. Basin Plan	0.003	<0.001	<0.001		
Chromium	mg/L	NA	1. Basin Plan	<0.005	<0.005	<0.005		
Copper	mg/L	NA	1. Basin Plan	0.011	0.006	0.012		
Lead	mg/L	NA		0.003	<0.001	0.004		
Nickel	mg/L	NA	1. Basin Plan	0.004	0.003	0.004		
Selenium	mg/L	NA	16. 40 CFR 131.38	<0.004	<0.004	<0.004		
Zinc	mg/L	NA	1. Basin Plan	0.047	0.022	0.047		
Dissolved Metals								
Antimony	mg/L	0.006	1. Basin Plan	<0.002	<0.002	0.002		
Arsenic	mg/L	0.34 (c)	16. 40 CFR 131.38	0.002	<0.001	<0.001	0%	0.01
Cadmium	mg/L	(d)	16. 40 CFR 131.38	<0.001	<0.001	<0.001	0%	0.08
Chromium	mg/L	(d)	16. 40 CFR 131.38	<0.005	<0.005	<0.005	0%	0.01
Copper	mg/L	(d)	16. 40 CFR 131.38	0.006	0.004	0.005	0%	0.18
Lead	mg/L	(d)	16. 40 CFR 131.38	<0.001	<0.001	<0.001	0%	0.09
Nickel	mg/L	(d)	16. 40 CFR 131.38	0.004	<0.002	0.002	0%	0.01
Selenium	mg/L	NA	16. 40 CFR 131.38	<0.004	<0.004	<0.004	0%	0.01
Zinc	mg/L	(d)	16. 40 CFR 131.38	0.023	<0.02	<0.02	0%	0.05
Toxicity								
<i>Ceriodaphnia</i> 96-hr	NOEC (%)	100		100	100	100	17%	0.33
<i>Ceriodaphnia</i> 7-day survival	NOEC (%)	100		100	100	100	17%	0.56
<i>Ceriodaphnia</i> 7-day reproduction	NOEC (%)	100		6.25	100	100	33%	1.78
<i>Hyalella</i> 96-hr	NOEC (%)	100		100	100	100	0%	0.00
<i>Selenastrum</i> 96-hr	NOEC (%)	100		100	100	100	39%	1.22

See last page for footnotes and source references.

Table D.9-1. Analytes Measured at the Sweetwater Mass Loading Station.

Blank spaces have been verified and no data is available due to changes in the monitoring program.

(a) Water Quality Benchmark is based on CMC (salmonids absent) using pH described in the U.S. EPA, 1999 Update of Ambient Water Quality Criteria for Ammonia, EPA-822-R-99-014, December 1999.

(b) Water Quality Benchmark for total dissolved solids is based on the San Diego Regional Water Quality Control Plan by watershed for the San Diego Region (Basin Plan), 1994 (with amendments effective prior to April 25, 2007).

(c) Water Quality Benchmark for dissolved metal fractions are based on a default water effects ratios (WER) value of 1 and are calculated as described by the USEPA Federal Register Doc. 40 CFR Part 131, May 18, 2000.

(d) Water Quality Benchmark for dissolved metal fractions are based on total hardness and are calculated as described by the USEPA Federal Register Doc. 40 CFR Part 131, May 18, 2000. The Criteria Maximum Concentration (CMC) was used.

NA indicate no criteria or published value was available or applicable to the matrix or program.

Shaded text – exceeds water quality benchmark. Underlined results are above the **CMC** water quality benchmark.

* Indicates detection limit above water quality benchmark.

Sources

Please refer to the San Diego County Copermittee Regional Monitoring Program Benchmark Sources for benchmark source citations.

Table D.10-1. Analytes Measured at the Tijuana River Mass Loading Station.

Analyte	Units	Water Quality Benchmarks	Source	2001-2002			2002-2003			2003-2004			2004-2005			2005-2006		
				01/29/02	02/17/02	03/17/02	11/08/02	02/11/03	02/25/03	11/12/03	01/25/04	02/03/04	10/27/04	02/11/05	02/18/05	10/18/05	02/19/06	02/28/06
General / Physical / Organic																		
Electrical Conductivity	umhos/cm	NA	2. CCR, 5. Goldbook	1610	2300	2490	1664	1830	2890	1174	1471	25000	430	1449	1075	1715	1806	752
Oil and Grease	mg/L	10	1 Basin Plan, 3. Anacostia River TMDL, 4. MSGP 2000	4	2	1	3.93	1.23	8.56	9.1	2.38	6.44	2	4.69	5.28	2.5	1.32	2.9
pH	pH Units	6.5-9.0	1. Basin Plan	7.4	8.1	7.6	7.30	8.51	7.32	7.43	7.76	7.96	7.75	7.65	7.43	7.56	7.82	7.87
Water Temperature	Celcius						19.70	15.00	16.20	17.80	15.60	12.20	12.90	13.70	14.10	17.60	13.60	15.50
Bacteriological																		
Enterococci	MPN/100 mL	NA	1. Basin Plan	170,000	500,000	17,000	2,400,000	50,000	30,000	500,000	5,000,000	2,400,000	800,000	3,000,000	1,700,000	5,000,000	800,000	500,000
Fecal Coliform	MPN/100 mL	4000	1. Basin Plan REC-1/REC-2	800,000c	300,000c	300,000c	5,000,000	500,000	16,000,000	1,700,000	800,000	800,000	5,000,000	2,400,000	2,200,000	>16,000,000	9,000,000	500,000
Total Coliform	MPN/100 mL	NA	1. Basin Plan	1,700,000	800,000	1,100,000	>16,000,000	1,300,000	16,000,000	3,000,000	2,800,000	1,300,000	5,000,000	5,000,000	9,000,000	>16,000,000	16,000,000	2,200,000
Wet Chemistry																		
Ammonia As N	mg/L	(a)	6. U.S. EPA Water Quality Criteria (Freshwater)	8	7.2	6.4	5.22	8.00	10.40	1.9	8.05	6.4	4.5	8.14	3.28	16	4.38	7.21
Biochemical Oxygen Demand	mg/L	30	4. MSGP 2000, 8. McNeeley (1979)	27.3	46.2	33.3	3.56	86.4	23.2	70.9	72.5	98.6	23.9	67	26.6	23.1	28	25
Chemical Oxygen Demand	mg/L	120	4. MSGP 2000	95	263	122	152	257	113	319	217	903	76	197	50	170	140	141
Dissolved Organic Carbon	mg/L						30.6	35.7	23.4	45.8	29.3	14.4	39.2	20.3	8.65	30.2	37.9	82.4
Dissolved Phosphorus	mg/L	2	4. MSGP 2000	2.2	2.9	2.28	1.75	1.90	0.93	1.56	3.41	1.99	1.69	1.73	1.26	1.23	1.76	1.72
Nitrate As N	mg/L	10	1. Basin Plan	1.6	0.8	1.1	3.12	0.72	0.44	8.75	1.72	1.5	4.08	1.97	2.12	3.54	2.65	1.45
Nitrite As N	mg/L	1	1. Basin Plan	0.34	1.44	0.6	0.98	0.37	0.13	0.42	0.59	0.34	0.11	0.37	<0.05	0.81	0.66	0.29
Surfactants (MBAS)	mg/L	0.5	1. Basin Plan	<0.5	3.3	0.7	0.3	2.0	<0.1	<0.5	1.7	<0.5	<0.5	0.7	0.5	0.5	0.6	<0.5
Total Dissolved Solids	mg/L	2500 (b)	1. Basin Plan	737	1080	965	885	883	794	650	476	491	400	938	664	1290	532	720
Total Kjeldahl Nitrogen	mg/L	NA		10.3	12	16.8	9.5	13.6	22.0	16.4	19.8	19.5	19.4	18.2	10.4	16.3	14.7	7.5
Total Organic Carbon	mg/L						47.5	51.0	18.6	41.8	69.1	72.9	55.5	25.7	23.5	69.7	51.7	136
Total Phosphorus	mg/L	2	4. MSGP 2000	3.2	4.7	2.52	2.37	2.04	2.38	1.8	3.41	2.97	1.73	2.7	1.74	2.45	1.98	1.83
Total Suspended Solids	mg/L	100	4. MSGP 2000, 1. Basin Plan	240	48	176	160	97	1070	590	120	128	7440	890	2900	764	8140	7780
Turbidity	NTU	20	1. Basin Plan	48.4	19.9	54.7	141	72.8	1000	383	90.6	3270	4540	60.2	537	129	192	147
Pesticides																		
Chlorpyrifos	µg/L	0.02	12. CA Dept. of Fish & Game, 2000	0.06	0.08	0.09	0.168	<0.03*	<0.03*	<0.01	0.085	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02
Diazinon	µg/L	0.08	12. CA Dept. of Fish & Game, 2000, 11. Chollas Creek TMDL for Diazinon, 10. U.S. EPA, Aquatic Life Ambient Water Quality Criteria Diazinon	0.74	0.53	0.57	0.372	0.506	0.339	0.584	0.276	0.907	<0.01	0.394	0.169	0.241	0.278	0.128
Malathion	µg/L	0.43	13. CA Dept. of Fish & Game, 1998, 5. Goldbook				1.00	0.88	0.27	1.46	0.788	0.284	<0.01	0.498	<0.01	0.641	<0.02	<0.02
Hardness																		
Total Hardness	mg CaCO3/L			970	352	286	279	334	395	328	308	417	702	376	350	544	706	496
Total Metals																		
Antimony	mg/L	NA	1. Basin Plan	0.003	0.003	0.003	<0.002	0.002	0.003	<0.005	<0.006	<0.005	<0.005	<0.005	<0.005	<0.005	0.005	<0.005
Arsenic	mg/L	NA	1. Basin Plan	0.007	0.008	0.006	0.005	0.008	0.018	0.011	0.009	0.055	0.013	0.01	0.003	0.014	0.019	0.012
Cadmium	mg/L	NA	1. Basin Plan	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001	<0.001	0.005	0.001	<0.001	<0.001	<0.001	0.006	0.001
Chromium	mg/L	NA	1. Basin Plan	0.02	0.013	0.006	<0.005	0.006	0.049	0.026	<0.005	0.189	<0.005	0.014	0.006	<0.005	0.006	0.006
Copper	mg/L	NA	1. Basin Plan	0.028	0.013	0.016	0.008	0.021	0.053	0.058	0.02	0.197	0.017	0.038	0.043	0.013	0.082	0.011
Lead	mg/L	NA		0.025	0.005	0.009	0.004	0.011	0.045	0.048	0.007	0.278	0.009	0.057	0.056	0.009	0.089	0.008
Nickel	mg/L	NA	1. Basin Plan	0.044	0.033	0.028	0.003	0.021	0.040	0.029	0.013	0.101	0.051	0.015	0.019	0.025	0.050	0.017
Selenium	mg/L	NA	16. 40 CFR 131.38	<0.002	0.008	<0.002	<0.004	<0.004	<0.004	<0.005	<0.005	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	mg/L	NA	1. Basin Plan	0.120	0.041	0.062	<0.020	0.077	0.269	0.288	0.056	1.53	0.165	0.392	0.337	0.109	1.100	0.176
Dissolved Metals																		
Antimony	mg/L	0.006	1. Basin Plan	<0.002	<0.002	0.002	0.004	0.003	0.004	<0.005	<0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Arsenic	mg/L	0.34 (c)	16. 40 CFR 131.38	0.005	0.004	0.005	0.010	0.008	0.005	0.003	0.006	0.006	<0.002	<0.002	<0.002	0.007	0.003	<0.001
Cadmium	mg/L	(d)	16. 40 CFR 131.38	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.002	<0.001
Chromium	mg/L	(d)	16. 40 CFR 131.38	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	mg/L	(d)	16. 40 CFR 131.38	0.008	<0.005	<0.005	0.011	0.060	0.013	0.005	0.01	0.005	0.005	<0.005	<0.005	0.008	0.012	0.009
Lead	mg/L	(d)	16. 40 CFR 131.38	<0.002	0.002	<0.002	0.003	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.003	<0.002	<0.002	<0.002	<0.002
Nickel	mg/L	(d)	16. 40 CFR 131.38	0.033	0.028	0.024	0.018	0.017	0.013	0.003	0.011	0.007	0.006	0.009	0.006	0.014	0.013	0.008
Selenium	mg/L	NA	16. 40 CFR 131.38	<0.002	<0.002	<0.002	<0.004	<0.004	<0.004	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	mg/L	(d)	16. 40 CFR 131.38	<0.020	0.026	0.057	0.062	0.130	0.046	<0.02	<0.02	<0.02	<0.02	0.023	<0.020	0.033	0.031	<0.020
Toxicity																		
Ceriodaphnia 96-hr	NOEC (%)	100		25	12.5	25	12.5	6.25	25	12.5	12.5	12.5	50	25	25	12.5	25	25
Ceriodaphnia 7-day survival	NOEC (%)	100		12.5	12.5	12.5	12.5	6.25	12.5	6.25	12.5	6.25	25	25	25	12.5	12.5	12.5
Ceriodaphnia 7-day reproduction	NOEC (%)	100		6.25	12.5	6.25	12.5	6.25	12.5	6.25	12.5	12.5	50	25	25	12.5	12.5	12.5
Hyalella 96-hr	NOEC (%)	100		100	100	100	100	100	50	50	100	50	100	100	100	50	50	100
Selenastrum 96-hr	NOEC (%)	100		100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

See last page for footnotes and source references.

Table D.10-1. Analytes Measured at the Tijuana River Mass Loading Station.

Analyte	Units	Water Quality Benchmarks	Source	2006-2007			Frequency Above Benchmarks	Mean Ratio to Benchmarks
				10/14/06	1/30/07	4/20/07		
General / Physical / Organic								
Electrical Conductivity	umhos/cm	NA	2. CCR, 5. Goldbook	702	1460	991		
Oil and Grease	mg/L	10	1 Basin Plan, 3. Anacostia River TMDL, 4. MSGP 2000	38	<5	<5	6%	0.56
pH	pH Units	6.5-9.0	1. Basin Plan	7.56	7.47	7.53	0%	0.00
Water Temperature	Celcius			16.80	11.90	15.50		
Bacteriological								
Enterococci	MPN/100 mL	NA	1. Basin Plan	1,700,000	800,000	1,700,000		
Fecal Coliform	MPN/100 mL	4000	1. Basin Plan REC-1/REC-2	16,000,000	2,200,000	1,700,000	100%	1127.78
Total Coliform	MPN/100 mL	NA	1. Basin Plan	16,000,000	5,000,000	5,000,000		
Wet Chemistry								
Ammonia As N	mg/L	(a)	6. U.S. EPA Water Quality Criteria (Freshwater)	6.81	7.83	10.4	11%	0.59
Biochemical Oxygen Demand	mg/L	30	4. MSGP 2000, 8. McNeeley (1979)	15.1	77.7	67.6	50%	1.51
Chemical Oxygen Demand	mg/L	120	4. MSGP 2000	522	480	379	78%	2.13
Dissolved Organic Carbon	mg/L			65	47.6	42.5		
Dissolved Phosphorus	mg/L	2	4. MSGP 2000	1.91	1.88	2.36	28%	0.96
Nitrate As N	mg/L	10	1. Basin Plan	7.62	2.34	2.36	0%	0.27
Nitrite As N	mg/L	1	1. Basin Plan	0.43	0.66	0.33	6%	0.49
Surfactants (MBAS)	mg/L	0.5	1. Basin Plan	<0.5	<0.5	<0.5	33%	1.37
Total Dissolved Solids	mg/L	2500 (b)	1. Basin Plan	460	796	424	0%	0.29
Total Kjeldahl Nitrogen	mg/L	NA		9.7	21.6	11.4		
Total Organic Carbon	mg/L			130	60.4	76.8		
Total Phosphorus	mg/L	2	4. MSGP 2000	3	1.94	3.12	67%	1.27
Total Suspended Solids	mg/L	100	4. MSGP 2000, 1. Basin Plan	1560	692	1080	89%	18.82
Turbidity	NTU	20	1. Basin Plan	646	197	526	94%	33.49
Pesticides								
Chlorpyrifos	µg/L	0.02	12. CA Dept. of Fish & Game, 2000	<0.002	<0.002	<0.002	31%	1.67
Diazinon	µg/L	0.08	12. CA Dept. of Fish & Game, 2000, 11. Chollas Creek TMDL for Diazinon, 10. U.S. EPA, Aquatic Life Ambient Water Quality Criteria Diazinon	0.347	0.272	0.390	94%	4.90
Malathion	µg/L	0.43	13. CA Dept. of Fish & Game, 1998, 5. Goldbook	1.940	<0.006	0.736	53%	1.32
Hardness								
Total Hardness	mg CaCO3/L			379	348	263		
Total Metals								
Antimony	mg/L	NA	1. Basin Plan	0.004	0.008	0.004		
Arsenic	mg/L	NA	1. Basin Plan	0.025	0.009	0.009		
Cadmium	mg/L	NA	1. Basin Plan	0.006	<0.001	<0.001		
Chromium	mg/L	NA	1. Basin Plan	0.05	0.031	0.024		
Copper	mg/L	NA	1. Basin Plan	0.07	0.104	0.045		
Lead	mg/L	NA		0.102	0.078	0.047		
Nickel	mg/L	NA	1. Basin Plan	0.037	0.032	0.023		
Selenium	mg/L	NA	16. 40 CFR 131.38	<0.004	<0.004	<0.004		
Zinc	mg/L	NA	1. Basin Plan	0.558	0.456	0.296		
Dissolved Metals								
Antimony	mg/L	0.006	1. Basin Plan	0.003	0.005	0.003		
Arsenic	mg/L	0.34 (c)	16. 40 CFR 131.38	0.004	<0.001	<0.001	0%	0.01
Cadmium	mg/L	(d)	16. 40 CFR 131.38	<0.001	<0.001	<0.001	0%	0.10
Chromium	mg/L	(d)	16. 40 CFR 131.38	<0.005	<0.005	<0.005	0%	0.01
Copper	mg/L	(d)	16. 40 CFR 131.38	0.01	0.01	0.008	6%	0.40
Lead	mg/L	(d)	16. 40 CFR 131.38	<0.001	<0.001	<0.001	0%	0.13
Nickel	mg/L	(d)	16. 40 CFR 131.38	0.007	0.011	0.007	0%	0.09
Selenium	mg/L	NA	16. 40 CFR 131.38	<0.004	<0.004	<0.004	0%	0.01
Zinc	mg/L	(d)	16. 40 CFR 131.38	0.021	0.02	<0.02	0%	0.09
Toxicity								
<i>Ceriodaphnia</i> 96-hr	NOEC (%)	100		12.5	12.5	12.5	100%	6.56
<i>Ceriodaphnia</i> 7-day survival	NOEC (%)	100		6.25	6.25	6.25	100%	10.00
<i>Ceriodaphnia</i> 7-day reproduction	NOEC (%)	100		6.25	6.25	6.25	100%	10.33
<i>Hyalella</i> 96-hr	NOEC (%)	100		25	12.5	50	44%	1.33
<i>Selenastrum</i> 96-hr	NOEC (%)	100		100	100	100	0%	0.00

See last page for footnotes and source references.

Table D.10-1. Analytes Measured at the Tijuana River Mass Loading Station.

Blank spaces have been verified and no data is available due to changes in the monitoring program.

(a) Water Quality Benchmark is based on CMC (salmonids absent) using pH described in the U.S. EPA, 1999 Update of Ambient Water Quality Criteria for Ammonia, EPA-822-R-99-014, December 1999.

(b) Water Quality Benchmark for total dissolved solids is based on the San Diego Regional Water Quality Control Plan by watershed for the San Diego Region (Basin Plan), 1994 (with amendments effective prior to April 25, 2007).

(c) Water Quality Benchmark for dissolved metal fractions are based on a default water effects ratios (WER) value of 1 and are calculated as described by the USEPA Federal Register Doc. 40 CFR Part 131, May 18, 2000.

(d) Water Quality Benchmark for dissolved metal fractions are based on total hardness and are calculated as described by the USEPA Federal Register Doc. 40 CFR Part 131, May 18, 2000. The Criteria Maximum Concentration (CMC) was used.

NA indicate no criteria or published value was available or applicable to the matrix or program.

Shaded text – exceeds water quality benchmark. Underlined results are above the CMC water quality benchmark.

* Indicates detection limit above water quality benchmark.

Sources

Please refer to the San Diego County Copermittee Regional Monitoring Program Benchmark Sources for benchmark source citations.

Table D.12-1. Quality Control Data Table for Water.

Analyte	Units	LPC-MLS	LPC-MLS-Dup	RPD	SLR-MLS	SLR-MLS-DUP	RPD
		9/26-9/27/2007	9/26-9/27/2007	9/26-9/27/2007	2/4-2/5/2008	2/4-2/5/2008	2/4-2/5/2008
Bacteria							
Enterococci	MPN/100 mL	300	110	92.68	3000	3000	0.00
Fecal Coliforms	MPN/100 mL	20	< 20	200.00	1700	1300	26.67
Total Coliforms	MPN/100 mL	2200	1100	66.67	50000	8000	144.83
General Chemistry							
Ammonia-N	mg/L	0.01 J	0.01 J	0.00	0.18	0.14	25.00
Biochemical Oxygen Demand	mg/L	< 1	< 1		< 2	< 2	
Chemical Oxygen Demand	mg/L	45	43	4.55	27	27	0.00
Dissolved Organic Carbon	mg/L	13.6	14.3	5.02	9.5	9.5	0.00
MBAS	mg/L	0.149	0.153	2.65	0.057	0.059	3.45
Nitrate-N	mg/L	< 0.05	< 0.05		3.27	3.42	4.48
Nitrite-N	mg/L	< 0.05	< 0.05		0.03 J	0.03 J	0.00
Oil & Grease	mg/L	1.1 J	1 J	9.52	1.9 J	2.6 J	31.11
Total Dissolved Phosphorus	mg/L	0.04 J	0.05	22.22			
Total Dissolved Phosphorus-Low Range	mg/L				0.35	0.35	0.00
Total Dissolved Solids	mg/L	2057	2021	1.77	878	852	3.01
Total Hardness as CaCO3	mg/L	547.5	533.4	2.61	241.8	257	6.09
Total Kjeldahl Nitrogen	mg/L	1.1	1.1	0.00	1.8	2	10.53
Total Organic Carbon	mg/L	13.2	14.1	6.59	8.7	8.9	2.27
Total Phosphorus	mg/L	0.066	0.069	4.44			
Total Phosphorus-Low Range	mg/L				0.404	0.413	2.20
Total Suspended Solids	mg/L	5.3	3.7 J	35.56	128.7	138	6.97
Turbidity	NTUs	3.25	3	8.00	136	155	13.06
Metals							
Antimony (Sb) (dissolved)	µg/L	0.5	0.4 J	22.22	0.2 J	0.2 J	0.00
Antimony (Sb) (total)	µg/L	0.4 J	0.4 J	0.00	0.2 J	0.2 J	0.00
Arsenic (As) (dissolved)	µg/L	4.9	3.6	30.59	1.9	1.8	5.41
Arsenic (As) (total)	µg/L	4.8	3.9	20.69	2.4	2.3	4.26
Cadmium (Cd) (dissolved)	µg/L	< 0.4	< 0.4		< 0.4	< 0.4	
Cadmium (Cd) (total)	µg/L	< 0.4	< 0.4		< 0.4	< 0.4	
Chromium (Cr) (dissolved)	µg/L	0.1 J	0.1 J	0.00	0.2 J	0.2 J	0.00
Chromium (Cr) (total)	µg/L	0.2 J	0.1 J	66.67	1.6	2.1	27.03
Copper (Cu) (dissolved)	µg/L	1.8	1.4	25.00	2.9	2.4	18.87
Copper (Cu) (total)	µg/L	1.7	1.3	26.67	6.5	6.8	4.51
Lead (Pb) (dissolved)	µg/L	< 0.1	< 0.1		< 0.1	< 0.1	
Lead (Pb) (total)	µg/L	0.18	0.1	57.14	2.29	2.37	3.43
Nickel (Ni) (dissolved)	µg/L	2.7	1.8	40.00	1.4	1.3	7.41
Nickel (Ni) (total)	µg/L	2	1.8	10.53	2.5	2.7	7.69
Selenium (Se) (dissolved)	µg/L	0.6	0.6	0.00	0.5	0.6	18.18

Table D.12-1. Quality Control Data Table for Water.

Analyte	Units	LPC-MLS	LPC-MLS-Dup	RPD	SLR-MLS	SLR-MLS-DUP	RPD
		9/26-9/27/2007	9/26-9/27/2007	9/26-9/27/2007	2/4-2/5/2008	2/4-2/5/2008	2/4-2/5/2008
Selenium (Se) (total)	µg/L	0.5	0.5	0.00	0.6	0.6	0.00
Zinc (Zn) (dissolved)	µg/L	3.6	2.9	21.54	2.5	1.9	27.27
Zinc (Zn) (total)	µg/L	1.8	1.5	18.18	14.9	16.9	12.58
Organo Pesticides							
Bolstar (Sulprofos)	µg/L	< 4	< 4		< 4	< 4	
Chlorpyrifos	µg/L	< 2	< 2		< 2	< 2	
Demeton	µg/L	< 2	< 2		< 2	< 2	
Diazinon	µg/L	< 4	< 4		16.2	14.6	10.39
Dichlorvos	µg/L	< 6	< 6		< 6	< 6	
Dimethoate	µg/L	< 6	< 6		< 6	< 6	
Disulfoton	µg/L	< 2	< 2		< 2	< 2	
Ethoprop (Ethoprofos)	µg/L	< 2	< 2		< 2	< 2	
Fenchlorphos (Ronnell)	µg/L	< 4	< 4		< 4	< 4	
Fensulfothion	µg/L	< 2	< 2		< 2	< 2	
Fenthion	µg/L	< 4	< 4		< 4	< 4	
Malathion	µg/L	< 6	< 6		< 6	< 6	
Merphos	µg/L	< 2	< 2		< 2	< 2	
Methyl Parathion	µg/L	< 2	< 2		< 2	< 2	
Mevinphos (Phosdrin)	µg/L	< 16	< 16		< 16	< 16	
Phorate	µg/L	< 12	< 12		< 12	< 12	
Tetrachlorvinphos (Stirofos)	µg/L	< 4	< 4		< 4	< 4	
Tokuthion	µg/L	< 6	< 6		< 6	< 6	
Trichloronate	µg/L	< 2	< 2		< 2	< 2	
Pyrethroids by NCI							
Allethrin	µg/L	< 5	< 5		< 2	< 2	
Bifenthrin	µg/L	< 2	< 2		< 2	< 2	
Cyfluthrin	µg/L	< 2	< 2		< 2	< 2	
Cypermethrin	µg/L	< 2	< 2		< 2	< 2	
Danitol	µg/L	< 2	< 2		4.6	4.1	11.49
Deltamethrin	µg/L	< 2	< 2		< 2	< 2	
Esfenvalerate	µg/L	< 2	< 2		1.1 J	1 J	9.52
Fenvalerate	µg/L	< 2	< 2		< 2	< 2	
Fluvalinate	µg/L	< 2	< 2		< 2	< 2	
L-Cyhalothrin	µg/L	< 2	< 2		< 2	< 2	
Permethrin	µg/L	< 2	< 2		< 25	< 25	
Prallethrin	µg/L	< 2	< 2		< 2	< 2	
Resmethrin	µg/L	< 2	< 2		< 25	< 25	

Table D.12-2. Quality Control Data Table for Sediment.

Analyte	Units	SDC-MLS 12/5/2007	SDC-MLS-DUP 12/5/2007	RPD 12/5/2007
Pesticides				
Piperonyl Butoxide	ng/dry g	< 20	< 20	NA
Pyrethroids by NCI				
Allethrin	ng/dry g	< 2	< 2	NA
Bifenthrin	ng/dry g	4.2	< 2	NA
Cyfluthrin	ng/dry g	< 2	< 2	NA
Cypermethrin	ng/dry g	< 2	< 2	NA
Danitol	ng/dry g	< 2	< 2	NA
Deltamethrin	ng/dry g	< 2	< 2	NA
Esfenvalerate	ng/dry g	< 2	< 2	NA
Fenvalerate	ng/dry g	< 2	< 2	NA
Fluvalinate	ng/dry g	< 2	< 2	NA
L-Cyhalothrin	ng/dry g	< 2	< 2	NA
Permethrin	ng/dry g	< 25	< 25	NA
Prallethrin	ng/dry g	< 2	< 2	NA

Table D.12-3. Quality Control Data Table for Duplicates.

Analyte	Units	Equipment Blank 12/6/2007	Field Blank 10/1/2007
General Chemistry			
Ammonia-N	mg/L		< 0.05
Chemical Oxygen Demand	mg/L		49
Dissolved Organic Carbon	mg/L		5.5
MBAS	mg/L		0.012
Nitrate-N	mg/L		< 0.05
Nitrite-N	mg/L		< 0.05
Total Dissolved Phosphorus	mg/L		< 0.05
Total Dissolved Solids	mg/L		< 5
Total Hardness as CaCO3	mg/L		< 5
Total Kjeldahl Nitrogen	mg/L		0.56
Total Organic Carbon	mg/L	< 0.2	5.5
Total Phosphorus	mg/L		< 0.05
Total Suspended Solids	mg/L		< 5
Turbidity	NTUs		< 2
Metals			
Antimony (Sb) (dissolved)	µg/L		< 0.5
Antimony (Sb) (total)	µg/L		< 0.5
Arsenic (As) (dissolved)	µg/L		< 0.5
Arsenic (As) (total)	µg/L		< 0.5
Cadmium (Cd) (dissolved)	µg/L		< 0.4
Cadmium (Cd) (total)	µg/L		< 0.4
Chromium (Cr) (dissolved)	µg/L		< 0.5
Chromium (Cr) (total)	µg/L		< 0.5
Copper (Cu) (dissolved)	µg/L		< 0.8
Copper (Cu) (total)	µg/L		< 0.8
Lead (Pb) (dissolved)	µg/L		< 0.1
Lead (Pb) (total)	µg/L		< 0.1
Nickel (Ni) (dissolved)	µg/L		< 0.5
Nickel (Ni) (total)	µg/L		< 0.5
Selenium (Se) (dissolved)	µg/L		< 0.5
Selenium (Se) (total)	µg/L		< 0.5
Zinc (Zn) (dissolved)	µg/L		< 0.5
Zinc (Zn) (total)	µg/L		< 0.5
Organo Pesticides			
Bolstar (Sulprofos)	ng/L		< 4
Chlorpyrifos	ng/L		< 2
Demeton	ng/L		< 2
Diazinon	ng/L		< 4
Dichlorvos	ng/L		< 6
Dimethoate	ng/L		< 6
Disulfoton	ng/L		< 2
Ethoprop (Ethoprofos)	ng/L		< 2
Fenclorphos (Ronnel)	ng/L		< 4
Fensulfothion	ng/L		< 2
Fenthion	ng/L		< 4
Malathion	ng/L		< 6
Merphos	ng/L		< 2
Methyl Parathion	ng/L		< 2

Table D.12-3. Quality Control Data Table for Duplicates.

Analyte	Units	Equipment Blank 12/6/2007	Field Blank 10/1/2007
Mevinphos (Phosdrin)	ng/L		< 16
Phorate	ng/L		< 12
Tetrachlorvinphos (Stirofos)	ng/L		< 4
Tokuthion	ng/L		< 6
Trichloronate	ng/L		< 2
PAH			
1-Methylnaphthalene	ng/L		< 5
1-Methylphenanthrene	ng/L		< 5
2,3,5-Trimethylnaphthalene	ng/L		< 5
2,6-Dimethylnaphthalene	ng/L		< 5
2-Methylnaphthalene	ng/L		< 5
Acenaphthene	ng/L		< 5
Acenaphthylene	ng/L		< 5
Anthracene	ng/L		< 5
Benz[a]anthracene	ng/L		< 5
Benzo[a]pyrene	ng/L		< 5
Benzo[b]fluoranthene	ng/L		< 5
Benzo[e]pyrene	ng/L		< 5
Benzo[g,h,i]perylene	ng/L		< 5
Benzo[k]fluoranthene	ng/L		< 5
Biphenyl	ng/L		< 5
Chrysene	ng/L		< 5
Dibenz[a,h]anthracene	ng/L		< 5
Dibenzothiophene	ng/L		< 5
Fluoranthene	ng/L		< 5
Fluorene	ng/L		< 5
Indeno[1,2,3-c,d]pyrene	ng/L		< 5
Naphthalene	ng/L		< 5
Perylene	ng/L		< 5
Phenanthrene	ng/L		< 5
Pyrene	ng/L		< 5
PCB Congeners			
PCB008	ng/L		< 5
PCB018	ng/L		< 5
PCB028	ng/L		< 5
PCB031	ng/L		< 5
PCB033	ng/L		< 5
PCB037	ng/L		< 5
PCB044	ng/L		< 5
PCB049	ng/L		< 5
PCB052	ng/L		< 5
PCB066	ng/L		< 5
PCB070	ng/L		< 5
PCB074	ng/L		< 5
PCB077	ng/L		< 5
PCB081	ng/L		< 5
PCB087	ng/L		< 5
PCB095	ng/L		< 5
PCB097	ng/L		< 5

Table D.12-3. Quality Control Data Table for Duplicates.

Analyte	Units	Equipment Blank 12/6/2007	Field Blank 10/1/2007
PCB099	ng/L		< 5
PCB101	ng/L		< 5
PCB105	ng/L		< 5
PCB110	ng/L		< 5
PCB114	ng/L		< 5
PCB118	ng/L		< 5
PCB119	ng/L		< 5
PCB123	ng/L		< 5
PCB126	ng/L		< 5
PCB128	ng/L		< 5
PCB138	ng/L		< 5
PCB141	ng/L		< 5
PCB149	ng/L		< 5
PCB151	ng/L		< 5
PCB153	ng/L		< 5
PCB156	ng/L		< 5
PCB157	ng/L		< 5
PCB158	ng/L		< 5
PCB167	ng/L		< 5
PCB168+132	ng/L		< 5
PCB169	ng/L		< 5
PCB170	ng/L		< 5
PCB177	ng/L		< 5
PCB180	ng/L		< 5
PCB183	ng/L		< 5
PCB187	ng/L		< 5
PCB189	ng/L		< 5
PCB194	ng/L		< 5
PCB195	ng/L		< 5
PCB200	ng/L		< 5
PCB201	ng/L		< 5
PCB206	ng/L		< 5
PCB209	ng/L		< 5
Total Detectable PCBs	ng/L		0
Pesticides			
2,4'-DDD	ng/L		< 5
2,4'-DDE	ng/L		< 5
2,4'-DDT	ng/L		< 5
4,4'-DDD	ng/L		< 5
4,4'-DDE	ng/L		< 5
4,4'-DDT	ng/L		< 5
Aldrin	ng/L		< 5
BHC-alpha	ng/L		< 5
BHC-beta	ng/L		< 5
BHC-delta	ng/L		< 5
BHC-gamma	ng/L		< 5
Chlordane-alpha	ng/L		< 5
Chlordane-gamma	ng/L		< 5
cis-Nonachlor	ng/L		< 5

Table D.12-3. Quality Control Data Table for Duplicates.

Analyte	Units	Equipment Blank	Field Blank
		12/6/2007	10/1/2007
DCPA (Dacthal)	ng/L		< 10
Dicofol	ng/L		< 100
Dieldrin	ng/L		< 5
Endosulfan Sulfate	ng/L		< 5
Endosulfan-I	ng/L		< 5
Endosulfan-II	ng/L		< 5
Endrin	ng/L		< 5
Endrin Aldehyde	ng/L		< 5
Endrin Ketone	ng/L		< 5
Heptachlor	ng/L		< 5
Heptachlor Epoxide	ng/L		< 5
Methoxychlor	ng/L		< 5
Mirex	ng/L		< 5
Oxychlorane	ng/L		< 5
Perthane	ng/L		< 10
Piperonyl Butoxide	ng/L	< 20	
Total Chlordane	ng/L		0
Total Detectable DDTs	ng/L		0
Toxaphene	ng/L		< 50
trans-Nonachlor	ng/L		< 5
Pyrethroids by NCI			
Allethrin	ng/L	< 2	< 2
Bifenthrin	ng/L	< 2	< 2
Cyfluthrin	ng/L	< 2	< 2
Cypermethrin	ng/L	< 2	< 2
Danitol	ng/L	< 2	< 2
Deltamethrin	ng/L	< 2	< 2
Esfenvalerate	ng/L	< 2	< 2
Fenvalerate	ng/L	< 2	< 2
Fluvalinate	ng/L	< 2	< 2
L-Cyhalothrin	ng/L	< 2	< 2
Permethrin	ng/L	< 25	< 2
Prallethrin	ng/L	< 2	< 2
Resmethrin	ng/L		< 2
Total Detectable PAHs	ng/L		0