

Prepared by Brennan Ott
8/8/01

Sorrento Valley

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As described in the attached email conversation, the sampling at Sorrento Valley took place in the stormwater conveyance system for the City of San Diego. Since this is obviously not a natural occurring water body, and has no beneficial uses for that matter, the attached data is not analyzed for 303(d) listing.

From: Phil Hammer
To: Ott, Brennan
Date: 8/6/01 4:39PM
Subject: Re: A little help...

Brennan,

California stands for California Street downtown. The sampling station is located in a manhole for the City of San Diego's storm water conveyance system. The Sorrento Valley station was supposed to be located on Los Penasquitos Creek. There has been some controversy about whether it actually is located on the creek or on a tributary to the creek. Dave Gibson has the info on that sampling station. I'm not sure what the final determination was. I hope this helps,
-Phil

>>> Brennan Ott 08/06/01 03:58PM >>>

I'm working on the 303(d) lists and came across something that I was told you might be able to help me with. The City of San Diego Co-Permitte NPDES Stormwater Monitoring Program Report lists Sorrento Valley as station SV1 and provides water quality data for it from 1997-2000. The basin plan, however, does not list it anywhere. Does it go by a different name or something? The same thing goes for station SD13 in the same report by the City of San Diego. It lists SD13 as California. Is this the entire state?

Any help will be much appreciated. Thanks.

CC: Gibson, David

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I talked to Dave. They
sampled a ^{stormwater} runoff channel
from the freeway, not the
actual creek.

Sorrento Valley

STATION	METHOD	PARAMETER	UNITS	SAMPLE DATE		
				11/8/98	1/25/99	3/15/99
GRAB SAMPLES						
GENERAL/PHYSICAL/ORGANIC						
SV1		TEMPERATURE	C	NM		
SV1		pH	UNITS	6.48	--	6.34
SV1	EPA 413.2	OIL AND GREASE	MG/L	1.11	--	< 0.5
SV1	EPA 9050/SM 2510-B	ELECTRICAL CONDUCTIVITY	UMHOS/CM	203	--	141
BACTERIOLOGICAL						
SV1	SM 9223	TOTAL COLIFORM	MPN/100ML	141360	--	98000
SV1	9221E/MMO-MUG	FECAL COLIFORM	MPN/100ML	> 1600	--	> 1600
SV1	9230	FECAL STREPTOCOCCI	MPN/100ML	30	--	130
COMPOSITE SAMPLES						
INORGANIC - WET CHEM						
SV1	SM 5210-B	BOD	MG/L	37.0	4.0	11.0
SV1	SM 5220-C	CHEMICAL OXYGEN DEMAND	MG/L	39.0	19.0	59.0
SV1	SM 2340-B	TOTAL HARDNESS	MG/L	151	41.0	102
SV1	SM 5540-C	SURFACTANTS (MBAS)	MG/L	0.21	0.19	0.16
SV1	SM 4500 NH ₃ -C	AMMONIA AS NITROGEN	MG/L	0.3	0.71	0.79
SV1	SM 4500 NO ₃ -E	NITRATE-N	MG/L	1.96	0.93	0.98
SV1	SM 4500 NO ₂ -B	NITRITE-N	MG/L	0.12	0.07	< 0.05
SV1	SM 4500 P-E	DISSOLVED PHOSPHOROUS	MG/L	1.39	0.09	0.08
SV1	SM 4500 P-E	TOTAL PHOSPHORUS	MG/L	1.61	0.09	0.24
SV1	SM 4500 H-B	pH	UNITS	7.63	7.36	7.11
SV1	SM 2540-C	TOTAL DISSOLVED SOLIDS	MG/L	1624	125	249
SV1	SM 4500 NH ₃ -C	TOTAL KJELDAHL NITROGEN	MG/L	< 0.01	0.16	1.70
SV1	SM 2540-D	TOTAL SUSPENDED SOLIDS	MG/L	349	276	116
SV1	SM 2130 B	TURBIDITY	NTU	22.0	40.0	26.0
INORGANIC - METALS						
SV1	EPA 200.7	ARSENIC	MG/L	0.006	0.0012	0.002
SV1	EPA 200.7	CADMIUM	MG/L	0.016	< 0.00025	< 0.00025
SV1	EPA 200.7	CHROMIUM	MG/L	< 0.005	0.023	0.02
SV1	EPA 200.7	COPPER	MG/L	< 0.005	< 0.005	0.022
SV1	EPA 200.7	NICKEL	MG/L	0.006	0.088	0.018
SV1	EPA 200.7	LEAD	MG/L	0.01	0.009	0.039
SV1	EPA 200.7	ANTIMONY	MG/L	< 0.0015	< 0.0015	< 0.0015
SV1	EPA 200.7	SELENIUM	MG/L	0.005	< 0.001	< 0.001
SV1	EPA 200.7	ZINC	MG/L	< 0.025	< 0.025	0.15
ORGANOCHLORINE PESTICIDES & PCB'S						
SV1	EPA 8141	DIAZINON	UG/L	0.23	< 0.50	< 0.50
SV1	EPA 8141	CHLORPYRIFOS	UG/L	< 0.05	--	< 0.50

CATT of San Diego NIDES & Co. Permittee reports

Table 5-1
CONVENTIONAL, BIOLOGICAL AND ORGANIC COMPOUNDS
AT MASS LOADING STATIONS (AH1, SD5, SD8, SD13, SV1), 1999/2000

Parameter	Units	AH1			SV1			SD5			SD8			SD13		
		1/25/00	2/20/00	3/5/00	1/25/00	3/5/00	4/17/00	2/12/00	2/20/00	3/5/00	2/12/00	2/20/00	3/5/00	2/12/00	2/20/00	3/5/00
Grab Samples																
General/Physical/Organic																
Field pH	units	8.3	7.7	8.0	8.3	8.6	--	7.6	7.7	8.1	7.9	8.6	8.3	8.3	8.4	9.0
Oil and Grease	mg/l	3.24	3.54	2.28	2.98	2.54	2.10	4.16	1.56	2.96	1.92	2.04	1.48	1.76	1.76	5.60
Electrical Conductivity	umhos/cm	2160	1172	1194	463	312	120	746	823	792	186	187	185	118	107	98.0
Bacteriological																
Total Coliform	mprn/100ml	>1600	>1600	300	--	>1600	300	240	>1600	900	500	>1600	>1600	>1600	>1600	>1600
Fecal Coliform	mprn/100ml	>1600	>1600	<2.0	--	>1600	240	<2.0	>1600	<2.0	<2.0	>1600	>1600	>1600	>1600	>1600
Fecal Streptococci	mprn/100ml	>1600	>1600	<2.0	--	>1600	23.0	<2.0	>1600	<2.0	<2.0	>1600	>1600	<2.0	>1600	>1600
Composite Samples																
Inorganic - Wet Chemistry																
Laboratory pH	units	7.50	7.30	7.51	6.73	6.75	7.06	7.50	7.10	7.50	7.52	6.90	7.20	7.50	7.02	7.03
Biochemical Oxygen Demand	mg/l	6.00	2.98	6.60	17.7	3.30	3.00	11.7	2.38	5.70	7.80	2.54	6.10	7.60	5.25	5.00
Chemical Oxygen Demand	mg/l	70	66	41	141	28	42	74	60	36	41	104	57	50	48	35
Nitrate - nitrogen	mg/l	1.60	1.42	1.58	3.50	2.33	2.33	3.30	0.60	2.30	3.22	1.04	3.10	2.67	1.24	2.32
Nitrite - nitrogen	mg/l	0.057	<0.050	<0.050	0.280	<0.050	0.070	0.065	<0.050	<0.050	0.086	<0.050	<0.050	0.064	<0.050	<0.050
Ammonia as Nitrogen	mg/l	0.40	<0.10	0.11	3.6	0.29	1.21	1.57	<0.10	<0.10	1.65	<0.10	0.21	1.28	0.11	<0.10
Total Kjeldahl Nitrogen	mg/l	0.85	4.02	2.11	0.28	0.52	0.80	2.10	0.77	1.83	2.98	3.10	2.36	3.70	2.26	2.61
Dissolved Phosphorous	mg/l	0.12	0.22	<0.01	0.23	<0.01	<0.01	<0.01	0.13	<0.01	0.33	0.26	0.22	0.45	0.32	0.18
Total Phosphorous	mg/l	0.16	1.04	0.74	0.21	0.31	0.06	0.21	0.34	0.40	0.46	0.33	0.60	0.51	0.39	0.20
Total Hardness	mg/l CaCO3	52.2	155	35.3	44.6	21.0	26.0	216	126	105	40.9	35.1	45.5	44.3	35.3	25.0
Total Dissolved Solids	mg/l	1356	335	362	372	69	133	279	304	302	120	111	140	132	116	117
Total Suspended Solids	mg/l	65	134	286	53	174	34	478	80	87	457	62	200	45	39	42
Turbidity	ntu	22	52	58	30	25	13	17	63	60	50	27	38	18	32	35
Surfactants (MBAS)	mg/l	0.33	0.21	0.08	1.49	0.13	0.60	0.48	0.24	0.20	0.35	0.22	0.13	0.47	0.44	0.14
Organophosphate Pesticides																
Diazinon	µg/l	<0.50	0.47**	0.29	<0.50	<0.05	<0.50	0.30*	0.39**	0.18	0.27*	0.35**	0.20**	0.43*	0.48**	0.08
Chlorpyrifos	µg/l	<0.50	<0.50	<0.05	<0.50	<0.05	<0.50	<0.50	<0.50	<0.05	<0.50	<0.50	0.04*	<0.50	<0.50	<0.05

* Asterisk (*) indicates an estimated value that is below quantification limit. Double asterisk (**) indicates the percent difference between primary and confirmation columns is greater than 40%.

Table 5-2
 DISSOLVED METAL, TOTAL METAL, AND HARDNESS DATA SUMMARY —
 MASS LOADING STATIONS (AH1, SD5, SD8, SD13, SV1), 1999/2000

PARAMETER	AH1			SV1			SD5			SD8			SD13		
	1/25/00	2/20/00	3/5/00	1/25/00	3/5/00	4/17/00	2/12/00	2/20/00	3/5/00	2/12/00	2/20/00	3/5/00	2/12/00	2/20/00	3/5/00
TOTAL HARDNESS (mg/l CaCO ₃)	52.2	155	35.3	44.6	21.0	26.0	216	126	105	40.9	35.1	45.5	44.3	35.3	25.0
TOTAL METALS (µg/l)															
ANTIMONY	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5
ARSENIC	<1.0	18.0	7.0	<1.0	<1.0	<1.0	<1.0	6.0	9.0	<1.0	7.0	5.0	<1.0	5.0	3.0
CADMIUM	<0.25	1.0	0.25	<0.25	<0.25	<0.25	<0.25	1.0	<0.25	<0.25	2.0	<0.25	2.0	1.0	<0.25
CHROMIUM	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
COPPER	<5.0	54.0	20.0	40.0	10.0	<5.0	36.0	17.0	<5.0	29.0	16.0	14.0	33.0	17.0	<5.0
LEAD	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	27.0	<1.0	<1.0	15.0	<1.0	<1.0	15.0	<1.0	<1.0
NICKEL	<5.0	50.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
SELENIUM	<1.0	2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
ZINC	10.0	110.0	50.0	110.0	80.0	110.0	160.0	12.0	50.0	96.0	50.0	80.0	110.0	94.0	60.0
DISSOLVED METALS (µg/l)															
ANTIMONY	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5
ARSENIC	<1.0	11.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	5.0	<1.0	1.0	4.0	<1.0
CADMIUM	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
CHROMIUM	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
COPPER	<5.0	<5.0	<5.0	38.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
LEAD	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
NICKEL	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
SELENIUM	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
ZINC	10.0	<1.0	5.0	70.0	9.0	40.0	16.0	12.0	<1.0	19.0	28.0	8.0	19.0	53.0	9.0

SECTION FIVE

Chemical Analyses

**Table 5-2
TOTAL METAL AND HARDNESS DATA SUMMARY —
MASS LOADING STATIONS (AH1, SD5, SD8, SD13, SV1), 1998/99**

Metals Results 1997/98		AH1			SD5			SD8			SD13			SV1		
		11/8/98	1/31/99	3/15/99	11/8/98	1/25/99	3/15/99	11/8/98	1/25/99	3/15/99	11/8/98	1/25/99	3/15/99	11/8/98	1/25/99	3/15/99
Arsenic	mg/l	0.008	<0.001	<0.001	0.004	0.0015	0.002	0.006	0.0018	0.003	<0.001	<0.001	0.006	0.006	0.0012	0.002
Cadmium	mg/l	0.007	<0.00025	<0.00025	0.004	<0.00025	<0.00025	0.002	<0.00025	<0.00025	0.0069	<0.00025	<0.00025	0.016	<0.00025	<0.00025
Chromium	mg/l	<0.005	<0.005	0.12	<0.005	0.009	0.056	<0.005	0.015	0.035	<0.005	0.019	0.07	<0.005	0.023	0.02
Copper	mg/l	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.006	<0.005	0.015	<0.005	<0.005	0.10	<0.005	<0.005	0.022
Nickel	mg/l	0.03	<0.005	0.01	0.02	<0.005	0.009	0.04	0.028	0.016	0.03	0.048	0.029	0.006	0.088	0.018
Lead	mg/l	<0.001	<0.001	0.0017	0.04	0.003	0.023	<0.001	0.007	0.082	0.009	0.006	0.145	0.01	0.009	0.039
Antimony	mg/l	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	0.003	0.0019	<0.0015	<0.0015	<0.0015	<0.0015
Selenium	mg/l	<0.001	<0.001	<0.001	0.004	<0.001	<0.001	0.002	<0.001	<0.001	<0.001	<0.001	<0.001	0.005	<0.001	<0.001
Zinc	mg/l	0.03	0.194	0.035	<0.025	<0.025	0.071	0.03	0.048	0.21	0.06	0.036	0.51	<0.025	<0.025	0.15
Total hardness	mg/l	137	365	568	148	218	277	77	42.5	90.8	32.9	24.5	130	151	41.0	102

Table 5-1
CONVENTIONAL, BIOLOGICAL AND ORGANIC COMPOUNDS
AT MASS LOADING STATIONS (AH1, SD5, SD8, SD13, SV1), 1998/99

Mass Loading Stations		AH1			SD5			SD8			SD13			SV1		
Conventional/Biological/ Organic Constituents	Units	11/8/98	1/31/99	3/15/99	11/8/98	1/25/99	3/15/99	11/8/98	1/25/99	3/15/99	11/28/98	1/25/99	3/15/99	11/8/98	1/25/99	3/15/99
Laboratory pH	pH units	7.58	7.95	8.47	7.55	7.39	7.99	7.19	6.98	7.00	6.88	6.66	6.46	7.63	7.36	7.11
Electrical conductivity	µmhos/cm	652	1560	2270	6070	629	542	286	270	215	451	221	136	2.03	-	141
Total hardness	mg/l	137	365	568	148	218	277	77	42.5	90.8	32.9	24.5	130	151	41.0	102
Total suspended solids	mg/l	979	35.0	5.0	913	540	55.0	7.58	280	159	<1.0	164	372	349	276	116
Total dissolved solids	mg/l	853	892	1611	1492	563	660	249	125	222	111	97.0	407	1624	125	249
Turbidity	NTU	72.0	8.0	14.0	84.0	450	17.0	69	38.0	21.0	10.0	22.0	68.0	22.0	40.0	26.0
Biochemical oxygen demand	mg/l	20	<3.0	5.25	30.0	5.0	9.0	19.0	6.0	11.0	<3.0	<3.0	24.0	37.0	4.0	11.0
Chemical oxygen demand	mg/l	34.0	<5.0	21.0	61.0	33.0	33.0	59.0	41.0	85.0	38	32	160	39.0	19.0	59.0
Total coliform	MPN/100ml	>241900	8130	197000	>241900	125900	613000	>241900	298700	>2419000	344800	307600	>2419000	141360	-	98000
Fecal coliform	MPN/100ml	>1600	240	>1600	>1600	>1600	>1600	>1600	>1600	>1600	>1600	>1600	>1600	>1600	-	>1600
Fecal streptococci	MPN/100ml	50	8	130	<1	>1600	240	30	>1600	240	240	>1600	240	30	-	130
Oil and grease	mg/l	0.67	<0.5	0.6	0.7	<0.5	<0.5	1.29	1.56	0.95	4.6	0.9	<0.5	1.11	-	<0.5
Surfactants (MBAS)	mg/l	0.25	0.07	<0.05	0.51	0.08	<0.05	0.48	0.19	0.07	0.15	0.12	0.17	0.21	0.19	0.16
Total Kjeldahl nitrogen	mg/l	<0.01	0.44	2.8	0.12	2.93	1.85	0.44	1.25	3.61	2.10	0.94	5.62	<0.01	0.16	1.70
Nitrate-nitrogen	mg/l	2.1	0.86	1.10	0.52	0.70	0.53	1.1	0.98	0.44	1.70	1.10	0.45	1.96	0.93	0.98
Nitrite - nitrogen	mg/l	<0.05	<0.05	<0.05	0.10	<0.05	0.05	0.06	0.12	0.14	0.19	0.07	<0.05	0.12	0.07	<0.05
Ammonia as nitrogen	mg/l	0.3	0.15	0.21	0.6	0.57	0.51	1.00	0.78	1.06	0.94	0.79	2.28	0.3	0.71	0.79
Total phosphorus	mg/l	0.72	0.13	0.12	0.61	0.16	0.16	1.28	0.3	0.17	0.46	0.33	0.32	1.61	0.09	0.08
Dissolved phosphorus	mg/l	0.57	0.12	0.10	0.52	0.15	0.10	1.07	0.27	0.22	0.41	0.34	0.18	1.39	0.09	0.08
Diazinon	µg/l	0.16	<0.50	0.38	0.40	0.28	0.41	0.46	0.46	0.53	0.72	0.47	0.79	0.23	<0.50	<0.50
Chlorpyrifos	µg/l	<0.05	-	<0.50	<0.05	-	<0.50	0.10	-	<0.50	-	-	<0.50	<0.05	-	<0.50

SECTION FIVE

Results

Table 5-5
CONVENTIONAL, BIOLOGICAL AND ORGANIC COMPOUNDS AT MASS LOADING STATIONS (SD5, SD8, SD13, SV1), 1997/98

Mass Loading Stations		SD5			SD8			SD13			SV1		
Conventional/Biological/Organic Constituents	Units	11/10/97	12/6/97	3/25/98	11/10/97	12/6/97	3/14/98	11/10/97	11/26/97	2/3/98	11/10/97	11/26/97	2/3/98
Laboratory pH	pH units	7.35	7.82	7.27	6.97	7.56 ^e	6.70 ^e	6.35 ^e	7.10	6.70	7.41	8.90	7.19
Electrical conductivity	µmhos/cm	1130	1690	726	310	155	1146	732	337	61	—	259	62
Total hardness	mg/l	694	186	124	116	39	96.4	44.2	16.5	14.4	46.3	52.0	54.7
Total suspended solids	mg/l	410	503	2024	182	315	805	350	140	198	164	258	348
Total dissolved solids	mg/l	1730	447	318	374	250	344	167	92	98	154	180	214
Turbidity	NTU	160	27	96	90	29	24	62	71	43	63	68	392
Biochemical oxygen demand	mg/l	33	43	22	49	24	40 ^e	39	62	4	15	52	15
Chemical oxygen demand	mg/l	89	20	22	146	44	135	85	100	17	124	87	22
Total coliform	MPN/100ml	>160,000	>20,000	>20,000	>160,000	>20,000	—	>160,000	>20,000	>20,000	—	>20,000	16,500
Fecal coliform	MPN/100ml	160,000	3,640	8,850	>160,000	9,450	—	90,000	10,900	9,450	—	3,640	420
Fecal streptococci	MPN/100ml	160,000	16,000 ^e	50	>160,000	16,000 ^e	—	160,000 ^e	230	170	—	2,400	1,600
Oil and grease	mg/l	3.6	1.6	0.6	6.9	<0.5	4.56	2.9	1.3	<0.5	—	<0.5	<0.5
Total petroleum hydrocarbons (TPH)	mg/l	—	—	—	—	—	—	—	—	—	—	—	—
Surfactants (MBAS)	mg/l	<0.10	0.05	0.20	<0.10	0.07	0.66 ^e	0.14	0.062	<0.05	0.10	0.112	0.08
Total Kjeldahl nitrogen	mg/l	1.6	<1.0	1.1	1.6	<1.0	15.0	1.5	1.41	1.6	0.95	1.32	<1.0
Nitrate-nitrite as nitrogen	mg/l	1.7	—	—	3.5	—	—	2.8	—	—	2.3	—	—
Nitrate-nitrogen	mg/l	—	0.54	0.5	—	0.52	0.4	—	1.0	0.5	—	1.5	0.3
Nitrite - nitrogen	mg/l	—	0.06	0.05	—	0.08	<0.05	—	<0.05	<0.05	—	0.05	<0.05
Ammonia as nitrogen	mg/l	0.56	0.57	0.60	1.3	0.4	10.0	0.55	1.09	<0.5	1.3	0.80	<0.5
Total phosphorus	mg/l	0.70	0.12	0.23	0.7	<0.10	2.2	0.90	0.70	0.36	0.30	0.273	0.25
Dissolved phosphorus	mg/l	<0.10	0.10	0.12	0.40	<0.10	1.41	0.50	0.54	0.21	0.10	0.15	0.12
Total cyanide	mg/l	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	—	<0.02	<0.02
Bis (2-ethylhexyl) phthalate*	µg/l	15 ^e	24.7	13.3	24 ^e	8.72	37.5	—	94.5	10.9	—	14.7	9.98
Butyl benzyl phthalate	µg/l	<10 ^e	<2.5	2.51	<10 ^e	<2.5	13.3	—	29.3	<2.5	—	12.8	<2.5
Di-n-butyl phthalate	µg/l	<10 ^e	37.5	42.7	<10 ^e	34.6	15.9	—	49.8	55.7	—	69.5	43.8

* Bis (2-ethylhexyl) phthalate was detected in a field equipment blank taken prior to the start of the wet-weather monitoring season. Since this compound was detected in the blank, levels present in the stormwater should be considered as non-detect at an elevated level.

^e Estimated result due to sample holding time exceedence.

**Table 5-8
TOTAL METAL AND HARDNESS DATA SUMMARY —
INDUSTRIAL SITES (SC2, NC3, SD11), 1997/98**

Metals Results 1997/98		NC3			SC2			SD11		
		11/26/97	12/6/97	3/14/98	11/10/97	12/6/97	2/3/98	11/10/97	11/26/97	2/3/98
Silver	µg/l	<7	<7	<7	<5	<7	<7	<5	<7	<7
Arsenic	µg/l	<53	<53	<53	<1	<53	<53	5	<53	<53
Beryllium	µg/l	<0.3	<0.3	<0.3	<2	<0.3	<0.3	<2	<0.3	<0.3
Cadmium	µg/l	<4	<4	<4	0.60	<4	<4	0.70	<4	<4
Chromium	µg/l	<7	<7	18	<5	<7	22	<5	12	<7
Copper	µg/l	42	38	60	28	36	43	96	128	37
Aqueous Mercury	µg/l	<2	<2	<2	<0.5	<2	<2	<0.5	<2	<2
Nickel	µg/l	31	43	<15	11	39	<15	16	24	<15
Lead	µg/l	<42	<42	151	2	<42	<42	5	<42	<42
Antimony	µg/l	<32	<32	<32	2.7	<32	<32	<1.5	<32	<32
Selenium	µg/l	<75	<75	<75	1	<75	<75	<1	<75	<75
Thallium	µg/l	<40	<40	<40	<2	<40	<40	<2	<40	<40
Zinc	µg/l	204	214	81	543	482	149	606	876	190
Hardness	µg/l	67.0	148.0	221.0	50.0	18.0	35.9	66.7	39.0	16.1

**Table 5-9
TOTAL METAL AND HARDNESS DATA SUMMARY —
MASS LOADING STATIONS (SD5, SD8, SD13, SV1), 1997/98**

Metals Results 1997/98		SD5			SD8			SD13			SV1		
		11/10/97	12/6/97	3/25/98	11/10/97	12/6/97	3/14/98	11/10/97	11/26/97	2/3/98	11/10/97	11/26/97	2/3/98
Silver	µg/l	<5	<7	<7	<5	<7	<7	<5	<7	<7	<5	<7	<7
Arsenic	µg/l	1	<53	<53	2	<53	<53	<1	<53	<53	2	<53	<53
Beryllium	µg/l	<2	<0.3	<0.3	<2	<0.3	<0.3	<2	<0.3	<0.3	<2	<0.3	<0.3
Cadmium	µg/l	<0.25	<4	<4	0.30	<4	<4	<0.25	<4	<4	<0.25	<4	<4
Chromium	µg/l	<5	<7	19	<5	<7	11	<5	16	24	<5	11	23
Copper	µg/l	9	56	146	17	28	28	35	61	37	14	50	30
Aqueous Mercury	µg/l	<0.5	<2	<2	<0.5	<2	<2	<0.5	<2	<2	<0.5	<2	<2
Nickel	µg/l	<5	<15	<15	9	<15	<15	6	38	<15	5	27	<15
Lead	µg/l	<1	<42	<42	3	<42	95	5	<42	<42	1	<42	<42
Antimony	µg/l	<1.5	<32	<32	1.6	<32	<32	<1.5	<32	<32	<1.5	<32	<32
Selenium	µg/l	<1	<75	<75	1	<75	<75	<1	<75	<75	1	<75	<75
Thallium	µg/l	<2	<40	<40	<2	<40	<40	<2	<40	<40	<2	<40	<40
Zinc	µg/l	69	68	130	176	11	92	176	329	70	129	189	67
Hardness	µg/l	694.0	186.0	124.0	116.0	39.0	96.4	44.2	16.5	14.4	463	52.0	54.7