

GRASSLAND BYPASS PROJECT

MONTHLY DATA REPORT

July 1997

September 25, 1997

Preliminary Results

A cooperative effort of:

U.S. Bureau of Reclamation
Central Valley Regional Water Quality Control Board
U.S. Fish and Wildlife Service
California Department of Fish and Game
San Luis & Delta-Mendota Water Authority
U.S. Environmental Protection Agency
U.S. Geological Survey

compiled by San Francisco Estuary Institute

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MONTHLY DATA REPORT

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Table 1. Continuous water monitoring at Station A (inflow to San Luis Drain), July 1997.

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow
DATA SOURCE	USBR
UNITS	cfs
Jul-01-1997	50.0
Jul-02-1997	56.3
Jul-03-1997	57.5
Jul-04-1997	49.8
Jul-05-1997	57.6
Jul-06-1997	57.7 i
Jul-07-1997	57.1 b
Jul-08-1997	51.1
Jul-09-1997	50.0
Jul-10-1997	61.2
Jul-11-1997	58.6
Jul-12-1997	54.5
Jul-13-1997	54.5
Jul-14-1997	53.7
Jul-15-1997	45.6
Jul-16-1997	51.8
Jul-17-1997	53.7
Jul-18-1997	51.7
Jul-19-1997	42.2
Jul-20-1997	41.6
Jul-21-1997	44.9
Jul-22-1997	47.2
Jul-23-1997	51.4
Jul-24-1997	54.4
Jul-25-1997	59.9
Jul-26-1997	59.1 b
Jul-27-1997	58.5 b
Jul-28-1997	60.3 b
Jul-29-1997	54.7
Jul-30-1997	47.6
Jul-31-1997	48.0

Table 2. Continuous water monitoring at Station B (discharge from San Luis Drain), July 1997.

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Temperature	Specific Conductance	Selenium (total)	Selenium (total) Load
DATA SOURCE	USBR	USBR	CVRWQCB	CVRWQCB	Computed
UNITS	cfs	°C	µS/cm	µg/l	lbs
Jul-01-1997	53.6	23.2	4,480	66.8	19.3
Jul-02-1997	54.0	23.6	4,540	62.8	18.3
Jul-03-1997	58.9	24.4	4,400	57.4	18.2
Jul-04-1997	58.4	25.9	4,430	54.8	17.3
Jul-05-1997	51.7	26.5	4,670	61.4	17.1
Jul-06-1997	58.3	26.7	4,510	49.9	15.7
Jul-07-1997	54.6	26.9	4,350	51.1	15.0
Jul-08-1997	57.0	27.2	4,090	42.9	13.2
Jul-09-1997	50.9	27.6	4,410	61.2	16.8
Jul-10-1997	50.8	27.1	4,060	43.4	11.9
Jul-11-1997	60.3	25.9	4,330	45.8	14.9
Jul-12-1997	58.1	25.1	4,120	39.0	12.2
Jul-13-1997	54.7	25.7	3,950	41.0	12.1
Jul-14-1997	54.1	26.4	4,050	46.9	13.7
Jul-15-1997	52.1	26.8	4,240	44.1	12.4
Jul-16-1997	46.6	27.2	4,260	43.8	11.0
Jul-17-1997	52.0	26.6	4,200	41.0	11.5
Jul-18-1997	54.8	26.0	4,300	44.1	13.0
Jul-19-1997	51.2	26.1	4,190	47.1	13.0
Jul-20-1997	44.3	26.5	4,110	57.4	13.7
Jul-21-1997	43.6	27.0	4,030	49.0	11.5
Jul-22-1997	46.2	27.4	4,150	52.8	13.2
Jul-23-1997	47.5	26.8	4,090	47.0	12.0
Jul-24-1997	51.1	27.0	4,190	46.2	12.7
Jul-25-1997	55.2	27.5	4,220	43.6	13.0
Jul-26-1997	59.4	27.7	4,180	44.0	14.1
Jul-27-1997	57.3	27.0	3,900	37.9	11.7
Jul-28-1997	55.3	26.7	3,950	44.0	13.1
Jul-29-1997	58.6	26.5	4,050	44.3	14.0
Jul-30-1997	52.2	25.9	4,000	40.0	11.3
Jul-31-1997	49.4	25.5	3,850	40.2	10.7
Mean	53.3	26.3	4,203	48.1	
Total					428
Load Limitation for July 1997 (lbs)					599

**Table 3. Continuous water monitoring at Station D
(Mud Slough North downstream of drainage discharges), July 1997.**

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Temperature	Specific Conductance
DATA SOURCE	usgs	usgs	usgs
UNITS	cfs	°C	µS/cm
Jul-01-1997	67	22.9	3,090
Jul-02-1997	62	23.0	3,250
Jul-03-1997	76	24.1	2,940
Jul-04-1997	78	25.7	2,970
Jul-05-1997	83	26.1	2,920
Jul-06-1997	104	26.2	2,820
Jul-07-1997	97	26.5	2,980
Jul-08-1997	94	27.0	2,810
Jul-09-1997	80	27.4	3,040
Jul-10-1997	71	26.9	3,220
Jul-11-1997	72	25.9	3,420
Jul-12-1997	69	25.0	3,350
Jul-13-1997	65	25.6	3,150
Jul-14-1997	66	26.1	3,360
Jul-15-1997	73	26.6	3,100
Jul-16-1997	64	26.5	3,340
Jul-17-1997	63	26.3	3,590
Jul-18-1997	79	25.6	3,320
Jul-19-1997	98	25.7	2,730
Jul-20-1997	97	26.2	2,560
Jul-21-1997	100	26.5	2,290
Jul-22-1997	99	27.0	2,360
Jul-23-1997	91	26.3	2,600
Jul-24-1997	71	26.6	3,300
Jul-25-1997	77	26.9	3,400
Jul-26-1997	102	27.1	3,040
Jul-27-1997	117	26.6	2,520
Jul-28-1997	130	26.2	2,220
Jul-29-1997	121	26.0	2,320
Jul-30-1997	105	25.6	2,590
Jul-31-1997	102	25.1	2,670

Table 4. Continuous water monitoring at Station F (Salt Slough at Highway 165), July 1997.

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Temperature	Specific Conductance
DATA SOURCE	usgs	usgs	usgs
UNITS	cfs	°C	µS/cm
Jul-01-1997	219	24.0	NP
Jul-02-1997	192	24.8	NP
Jul-03-1997	139	25.9	NP
Jul-04-1997	115	26.5	1,340
Jul-05-1997	126	26.3	1,190
Jul-06-1997	129	25.9	1,190
Jul-07-1997	147	26.1	1,150
Jul-08-1997	145	27.0	1,110
Jul-09-1997	127	27.5	1,230
Jul-10-1997	124	26.3	1,280
Jul-11-1997	136	25.3	1,180
Jul-12-1997	132	24.3	1,220
Jul-13-1997	145	26.0	1,110
Jul-14-1997	165	26.8	987
Jul-15-1997	169	27.2	947
Jul-16-1997	145	27.0	1,020
Jul-17-1997	143	25.8	1,020
Jul-18-1997	162	25.3	960
Jul-19-1997	168	26.2	948
Jul-20-1997	160	26.8	964
Jul-21-1997	193	27.1	919
Jul-22-1997	176	27.5	895
Jul-23-1997	136	26.3	983
Jul-24-1997	113	26.9	1,100
Jul-25-1997	145	27.2	1,090
Jul-26-1997	167	27.3	931
Jul-27-1997	183	26.0	952
Jul-28-1997	210	26.0	879
Jul-29-1997	233	25.7	887
Jul-30-1997	254	25.1	932
Jul-31-1997	214	24.9	988

Table 5. Continuous water monitoring at Station N (San Joaquin River at Crow's Landing), July 1997.

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Temperature	Specific Conductance	Selenium (total)
DATA SOURCE	USGS	USGS	CVRWQCB	CVRWQCB
UNITS	cfs	°C	µS/cm	µg/l
Jul-01-1997	617	23.4	1,263	5.0
Jul-02-1997	618	23.6	1,223	4.7
Jul-03-1997	613	24.5	1,306	6.0
Jul-04-1997	557	25.9	1,421	6.4
Jul-05-1997	574	25.8	1,403	6.0
Jul-06-1997	593	25.8	1,386	5.7
Jul-07-1997	632	26.1	1,263	5.3
Jul-08-1997	612	26.9	1,299	5.6
Jul-09-1997	593	27.4	1,244	4.2
Jul-10-1997	541	27.2	1,357	5.3
Jul-11-1997	540	26.7	1,362	5.8
Jul-12-1997	543	26.4	1,384	4.4
Jul-13-1997	570	26.5	1,337	5.4
Jul-14-1997	555	26.7	1,283	4.1
Jul-15-1997	583	26.9	1,227	4.6
Jul-16-1997	584	26.6	1,166	4.3
Jul-17-1997	541	26.1	1,207	4.0
Jul-18-1997	508	25.6	1,319	4.3
Jul-19-1997	542	26.1	1,359	4.8
Jul-20-1997	591	26.9	1,297	4.7
Jul-21-1997	661	26.9	1,112	4.2
Jul-22-1997	630	27.2	1,087	4.3
Jul-23-1997	611	26.9	1,107	4.3
Jul-24-1997	599	26.1	1,120	4.0
Jul-25-1997	514	26.8	1,294	4.5
Jul-26-1997	503	27.0	1,415	5.1
Jul-27-1997	575	26.5	1,339	4.8
Jul-28-1997	605	NP	1,241	4.4
Jul-29-1997	609	NP	1,161	3.7
Jul-30-1997	599	NP	1,150	4.1
Jul-31-1997	620	NP	1,270	4.8

Table 6. Weekly water quality monitoring at Station A (inflow to San Luis Drain), 1997.

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Temperature	pH	Specific Conductance	Total Suspended Solids	Selenium (total)	Selenium (dissolved)	Boron
DATA SOURCE	USBR	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	°C		µS/cm	mg/l	µg/l	µg/l	mg/l
Jul-02-1997	56.3	NA	NA	4,660	130	65.8	64.1	P
Jul-09-1997	50.0	NA	NA	4,140	150	40.6	40.5	P
Jul-16-1997	51.8	NA	NA	4,220	120	54.5	53.0	P
Jul-23-1997	51.4	NA	NA	4,050	110	40.5	43.5	P
Jul-30-1997	47.6	NA	NA	3,950	170	45.5	44.6	P

Table 7. Weekly water quality monitoring at Station B (discharge from San Luis Drain), 1997.

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Temperature	pH	Specific Conductance	Total Suspended Solids	Selenium (total)	Selenium (dissolved)	Boron
DATA SOURCE	USBR	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	°C		µS/cm	mg/l	µg/l	µg/l	mg/l
Jul-02-1997	54.0	24.3	8.4	4,410	30	59.9	59.8	P
Jul-10-1997	50.8	25.4	8.3	4,030	25	34.9	35.0	P
Jul-17-1997	52.0	26.6	8.2	4,060	18	37.0	37.0	P
Jul-24-1997	51.1	27.1	8.0	4,000	17	41.8	39.5	P
Jul-31-1997	49.4	25.4	6.3	3,940	17	43.7	42.4	P

Table 8. Weekly water quality monitoring at Station C (Mud Slough North upstream of drainage discharges), 1997.

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER		Temperature	pH	Specific Conductance	Selenium (total)	Boron
DATA SOURCE	.	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	.	°C		µS/cm	µg/l	mg/l
Jul-02-1997	.	26.0	8.3	1,542	1.0	P
Jul-10-1997	.	24.9	8.1	1,208	1.4	P
Jul-17-1997	.	26.6	8.3	1,549	1.3	P
Jul-24-1997	.	28.2	8.1	1,165	1.5	P
Jul-31-1997	.	26.6	8.0	859	1.1	P

Table 9. Weekly water quality monitoring at Station D (Mud Slough North downstream of drainage discharges), 1997.

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Temperature	pH	Specific Conductance	Selenium (total)	Boron
DATA SOURCE	USGS	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	°C		µS/cm	µg/l	mg/l
Jul-02-1997	62	24.9	8.4	3,990	50.4	P
Jul-10-1997	71	25.4	8.3	3,310	29.7	P
Jul-17-1997	63	27.7	8.4	3,730	33.3	P
Jul-24-1997	71	27.7	7.9	3,510	36.4	P
Jul-31-1997	102	26.6	7.2	2,550	18.4	P

Table 10. Weekly water quality monitoring at Station F (Salt Slough at Lander Avenue), 1997.

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Temperature	pH	Specific Conductance	Selenium (total)	Boron
DATA SOURCE	USBR	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	°C		µS/cm	µg/l	mg/l
Jul-02-1997	192	23.2	7.7	1,074	1.1	P
Jul-10-1997	124	23.8	7.8	1,310	0.9	P
Jul-17-1997	143	25.4	8.6	1,030	1.0	P
Jul-24-1997	113	25.4	8.2	1,142	0.9	P
Jul-31-1997	NP	25.4	8.4	975	1.1	P

Table 11. Weekly water quality monitoring at Station G (San Joaquin River at Fremont Ford), 1997.

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	.	Temperature	pH	Specific Conductance	Selenium (total)	Boron
DATA SOURCE	.	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	.	°C		µS/cm	µg/l	mg/l
Jul-02-1997	.	22.1	7.9	1,100	1.0	P
Jul-10-1997	.	24.3	8.0	1,392	1.0	P
Jul-17-1997	.	25.4	8.0	1,200	0.9	P
Jul-24-1997	.	25.4	7.9	1,195	1.0	P
Jul-31-1997	.	25.4	7.5	944	1.0	P

Table 12. Weekly water quality monitoring at Station H (San Joaquin River at Hills Ferry), 1997.

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Temperature	pH	Specific Conductance	Selenium (total)	Boron
DATA SOURCE	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	°C		µS/cm	µg/l	mg/l
Jul-02-1997	22.7	8.1	1,741	10.0	P
Jul-10-1997	24.3	8.2	1,881	11.1	P
Jul-17-1997	25.4	7.7	1,820	7.5	P
Jul-24-1997	24.9	7.8	1,708	9.2	P
Jul-31-1997	23.2	6.6	1,408	5.4	P

Table 13. Weekly water quality monitoring at Station J (Camp 13 Ditch), 1997.

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Temperature	pH	Specific Conductance	Selenium (total)	Boron
DATA SOURCE	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	°C		µS/cm	µg/l	mg/l
Jul-02-1997	NA	NA	563	1.1	P
Jul-09-1997	NA	NA	460	1.1	P
Jul-16-1997	NA	NA	614	1.6	P
Jul-23-1997	NA	NA	614	1.2	P
Jul-30-1997	NA	NA	1,110	2.2	P

Table 14. Weekly water quality monitoring at Station K (Agatha Canal), 1997.

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Temperature	pH	Specific Conductance	Selenium (total)	Boron
DATA SOURCE	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	°C		µS/cm	µg/l	mg/l
Jul-02-1997	NA	NA	436	1.1	P
Jul-09-1997	NA	NA	396	1.0	P
Jul-16-1997	NA	NA	406	1.6	P
Jul-23-1997	NA	NA	419	1.6	P
Jul-30-1997	NA	NA	419	1.2	P

Table 15. Weekly water quality monitoring at Station L (San Luis Canal at Henry Miller Road), 1997.

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Temperature	pH	Specific Conductance	Selenium (total)	Boron
DATA SOURCE	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	°C		µS/cm	µg/l	mg/l
Jul-02-1997	NA	NA	698	1.9	P
Jul-09-1997	NA	NA	917	2.5	P
Jul-16-1997	NA	NA	628	1.8	P
Jul-23-1997	NA	NA	762	2.1	P
Jul-30-1997	NA	NA	750	1.8	P

Table 16. Weekly water quality monitoring at Station M (Santa Fe Canal at Henry Miller Road), 1997.

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Temperature	pH	Specific Conductance	Selenium (total)	Boron
DATA SOURCE	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	°C		µS/cm	µg/l	mg/l
Jul-02-1997	NA	NA	799	2.2	P
Jul-09-1997	NA	NA	946	2.6	P
Jul-16-1997	NA	NA	841	2.2	P
Jul-23-1997	NA	NA	797	2.1	P
Jul-30-1997	NA	NA	938	2.1	P

Table 17. Weekly water quality monitoring at Station N (San Joaquin River at Crow's Landing), 1997.

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Temperature	pH	Specific Conductance	Selenium (total)	Boron
DATA SOURCE	USGS	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	°C		µS/cm	µg/l	mg/l
Jul-02-1997	618	21.0	7.9	1,247	4.8	P
Jul-10-1997	541	23.8	8.1	1,354	5.0	P
Jul-17-1997	541	24.3	7.6	1,230	4.0	P
Jul-24-1997	599	23.8	7.7	1,080	3.9	P
Jul-31-1997	620	23.2	6.9	1,281	4.8	P

Table 18. Summary of fathead minnow (*Pimephales promelas*) larvae survival in 7-day tests using water samples collected from March 1996 to July 1997. Each value is the mean of 4 replicates with 10 fish in each replicate.

See Table 26 for explanation of footnotes and agency abbreviations.

LOCATION	Station B	Station C	Station D	Station F	Delta Mendota Canal	Laboratory Control
DATA SOURCE	SLDMWA	SLDMWA	SLDMWA	SLDMWA	SLDMWA	SLDMWA
UNITS	%	%	%	%	%	%
March-96	NT	93	95	93	95	96
August-96	NT	98	93	96	90	100
October-96	68	83	88	88	93	98
November-96	98	98	95	85	95	93
December-96	98	50*	78*	93	98	100
January-97	95	92	83	90	88	95
February-97	95	90*	95	90	100	48
March-97	95	98	98	93	98	95
April-97	95	100	95	98	88	83
May-97	95	100	95	100	93	100
June-97	93	98	95	93	90	90
July-97	100	93	98	98	100	98

Table 19. Summary of fathead minnow (*Pimephales promelas*) larvae growth in 7-day tests using water samples collected from March 1996 to July 1997. Each value is the mean of 4 replicates with 10 fish in each replicate.

See Table 26 for explanation of footnotes and agency abbreviations.

LOCATION	Station B	Station C	Station D	Station F	Delta Mendota Canal	Laboratory Control
DATA SOURCE	SLDMWA	SLDMWA	SLDMWA	SLDMWA	SLDMWA	SLDMWA
UNITS	mg	mg	mg	mg	mg	mg
March-96	NT	0.43	0.44	0.44	0.47	0.48
August-96	NT	0.56	0.45	0.44	0.50	0.47
October-96	0.56	0.56	0.53*	0.59	0.60	0.59
November-96	0.53	0.57	0.63	0.53	0.55	0.59
December-96	0.71	0.71	0.83	0.65	0.68	0.58
January-97	0.74	0.80	0.80	0.83	0.65	0.71
February-97	0.69*	0.79	0.77	0.92	0.76	0.31
March-97	0.99	0.96	1.01	0.90	0.81	0.81
April-97	1.11	1.02	1.06	1.15	1.05	0.83
May-97	0.85	0.91	0.95	0.89	0.88	0.80
June-97	0.66	0.69	0.71	0.72	0.68	0.73
July-97	0.97	0.80*	0.95	0.91	0.92	0.89

Table 20. Summary of *Daphnia magna* survival in 7-day tests using water samples collected from March 1996 to July 1997. Each value is the mean of 10 replicates with 1 animal in each replicate.

See Table 26 for explanation of footnotes and agency abbreviations.

LOCATION	Station B	Station C	Station D	Station F	Delta Mendota Canal	Laboratory Control
DATA SOURCE	SLDMWA	SLDMWA	SLDMWA	SLDMWA	SLDMWA	SLDMWA
UNITS	%	%	%	%	%	%
March-96	NT	90	90	100	100	100
August-96	NT	100	100	100	100	100
October-96	90	100	100	100	100	70
November-96	100	90	90	100	100	100
December-96	100	80	80	100	100	100
January-97	100	90	100	100	100	100
February-97	100	100	100	100	100	100
March-97	100	90	90	80	100	50
April-97	80	90	100	90	90	50
May-97	90	90	90	80	90	30
June-97	90	100	70	100	80	90
July-97	90	90	100	100	100	90

Table 21. Summary of *Daphnia magna* reproduction in 7-day tests using water samples collected from March 1996 to July 1997. Each value is the mean of 10 replicates with 1 animal in each replicate.

See Table 26 for explanation of footnotes and agency abbreviations.

LOCATION	Station B	Station C	Station D	Station F	Delta Mendota Canal	Laboratory Control
DATA SOURCE	SLDMWA	SLDMWA	SLDMWA	SLDMWA	SLDMWA	SLDMWA
UNITS	neonates per female	neonates per female	neonates per female	neonates per female	neonates per female	neonates per female
March-96	NT	18.8	23.9	18.2	20.1	20.8
August-96	NT	27.0	32.8	27.4	27.8	26.4
October-96	16.8	20.2	17.9	13.1	12.9	16.0
November-96	30.6	21.8	21.9	22.4	21.5	15.9
December-96	23.2	14.0	17.2	17.8	16.8	14.8
January-97	15.2	15.4	15.3	15.6	13.6	10.9
February-97	25.1	23.0	22.8	20.1	18.0	22.7
March-97	22.8	16.6	15.3	9.7	8.9	5.5
April-97	23.6	24.4	24.6	16.3	12.9	10.0
May-97	30.6	33.8	34.0	21.6	17.2	20.0
June-97	50.9	58.8	41.1	50.2	29.6	31.6
July-97	35.6	28.1	33.2	27.7	19.1	17.1

Table 22. Summary of *Selenastrum capricornutum* growth in 4-day tests using water samples collected from March 1996 to July 1997. Each value is the mean of 4 replicates.

See Table 26 for explanation of footnotes and agency abbreviations.

LOCATION	Station B	Station C	Station D	Station F	Delta Mendota Canal	Laboratory Control
DATA SOURCE	SLDMWA	SLDMWA	SLDMWA	SLDMWA	SLDMWA	SLDMWA
UNITS	10 ⁵ cells/ml	10 ⁵ cells/ml	10 ⁵ cells/ml	10 ⁵ cells/ml	10 ⁵ cells/ml	10 ⁵ cells/ml
March-96	NT	9.4*	11.3	14.7	11.9	10.7
August-96	NT	6.2*	5.6*	13.8	16.8	14.7
October-96 ⁽²⁾	4.3	12.3	11.3	8.5	3.5	36.6
November-96 ⁽³⁾	16.6	56.1	48.9	33.5	39.7	91.1
December-96	0.5*	5.9	0.5*	4.2	3.4	18.9
January-97	11.0	9.3	12.5	11.6	8.0	8.2
February-97	10.6	5.5*	8.2*	13.7	19.8	22.2
March-97	11.0 *	13.8	11.7 *	6.0 *	20.0	21.6
April-97	19.7*	35.4*	46.5	30.8*	78.5	62.9
May-97	22.4	12.6*	18.6*	16.8*	26.3	17.2
June-97	42.0*	55.6	44.6	44.4	54.2	57.9
July-97	41.9	72.5	47.6	66.6	45.1	60.2

Table 23. Summary of selenium concentrations in grab water samples collected at study sites for use in laboratory toxicity tests, April 1996 to July 1997.

See Table 26 for explanation of footnotes and agency abbreviations.

LOCATION	Station B	Station C	Station D	Station F	Delta Mendota Canal
DATA SOURCE	SLDMWA/USBR	SLDMWA/USBR	SLDMWA/USBR	SLDMWA/USBR	SLDMWA/USBR
UNITS	µg/L	µg/L	µg/L	µg/L	µg/L
Apr-17-1997	130	<2	67	<2	<2
Apr-19-1997	120	<2	69	<2	<2
May-13-1997	84	<2	64	<2	<2
May-15-1997	79	<2	58	<2	<2
May-17-1997	64	<2	47	<2	<2
May-20-1997	64	<2	34	<2	<2
Jun-10-1997	46	<2	28	<2	<2
Jun-12-1997	56	<2	37	<2	<2
Jun-14-1997	75	<2	43	<2	<2
Jul-08-1997	44	<2	24	<2	<2
Jul-10-1997	36	<2	34	<2	<2
Jul-12-1997	32	<2	36	<2	<2

Table 24. Summary of sulfate concentrations in grab water samples collected at study sites for use in laboratory toxicity tests, April 1997 to July 1997.

See Table 26 for explanation of footnotes and agency abbreviations.

LOCATION	Station B	Station C	Station D	Station F	Delta Mendota Canal
DATA SOURCE	SLDMWA/USBR	SLDMWA/USBR	SLDMWA/USBR	SLDMWA/USBR	SLDMWA/USBR
UNITS	µg/L	µg/L	µg/L	µg/L	µg/L
Apr-17-1997	1,750	340	1,080	259	38
Apr-19-1997	1,680	378	1,120	251	37
May-13-1997	1,520	348	1,270	197	37
May-15-1997	1,450	117	683	111	13
May-17-1997	1,320	253	1,070	209	23
May-20-1997	1,300	102	688	181	36
Jun-10-1997	940	76	458	184	48
Jun-12-1997	1,360	278	1,120	179	36
Jun-14-1997	1,520	248	1,160	157	36
Jul-08-1997	827	183	489	88	38
Jul-10-1997	1,170	210	939	168	20
Jul-12-1997	1,170	313	1,080	144	19

Table 25. Summary of quarterly in situ bioassay results from December 1995 to May 1997.

Results are the number of live fathead minnows (*Pimephales promelas*) per number of fish recovered at the end of the 7 day deployment at each station (initial count of 80 used at each station).

See Table 26 for explanation of footnotes and agency abbreviations.

LOCATION	Windmill (4 day old larvae)	Station B (4 day old larvae)	Station D (4 day old larvae)	Station D (14 day old larvae)	Station F (4 day old larvae)	Station F (14 day old larvae)
DATA SOURCE	SLDMWA	SLDMWA	SLDMWA	SLDMWA	SLDMWA	SLDMWA
UNITS	# alive/total count	# alive/total count	# alive/total count	# alive/total count	# alive/total count	# alive/total count
December-95 ⁽⁴⁾	NT	NT	NT	NT	NT	NT
March-96 ⁽⁵⁾	80/80	NT	NT	44/44	NT	70/70
August-96 ⁽⁶⁾	NT	NT	13/19	22/29	28/40	20/49
November-1996 ⁽⁷⁾	46/62	63/68	0/2	.	16/36	.
February-1997 ⁽⁸⁾	NT	3/13	0/0	.	0/11	.
May-1997	64/66	0/0	0/24	.	5/9	.

Table 26. Explanations of footnotes and agency abbreviations.

Footnote	Explanation
CVRWQCB	California Regional Water Quality Control Board, Central Valley Region
SLDMWA	San Luis & Delta-Mendota Water Authority
USBR	U.S. Bureau of Reclamation
USGS	U.S. Geological Survey
.	Not applicable
<	less than
i	value based on interpolation
b	value based on partial readings
P	pending, data not available at this time but will be available in the future
NA	not analyzed - operator error, data will not be available in the future
NP	data not provided - future unknown
NT	not tested
(1)	This test used <i>Ceriodaphnia dubia</i> in water with high hardness. Results were compared to hard water and moderately hard water for definitive bioassays. All treatment means were significantly different from the laboratory control (hard water) for definitive tests.
(2)	Selenate added
(3)	Lab Control was significantly different from DMC, Site B, and Site F samples. (There was no significant difference for site samples versus DMC water.)
(4)	In situ cages could not be deployed due to wet weather conditions.
(5)	Baseline results for 3/96 are for 14-day old larvae. There was no survival for the 24-hour old larvae.
(6)	Windmill station was dry due to water drainage. Use of plastic screened beakers for Station F during 8/96 with use of 4-day old larvae resulted in 0/39. Apparent cause of mortality was elevated temperature and sediment which was found in all cages and beakers.
(7)	Heavy silt accumulation was noted in Sites D and F cages and light silt accumulation was observed in both the Windmill site and Site B.
(8)	Moderate silt accumulation was noted in Sites B and F cages and light silt accumulation was observed in Site D.
*	Significantly reduced from Delta Mendota Canal (p<0.05)