

GRASSLAND BYPASS PROJECT

MONTHLY DATA REPORT

May 2002

August 2, 2002

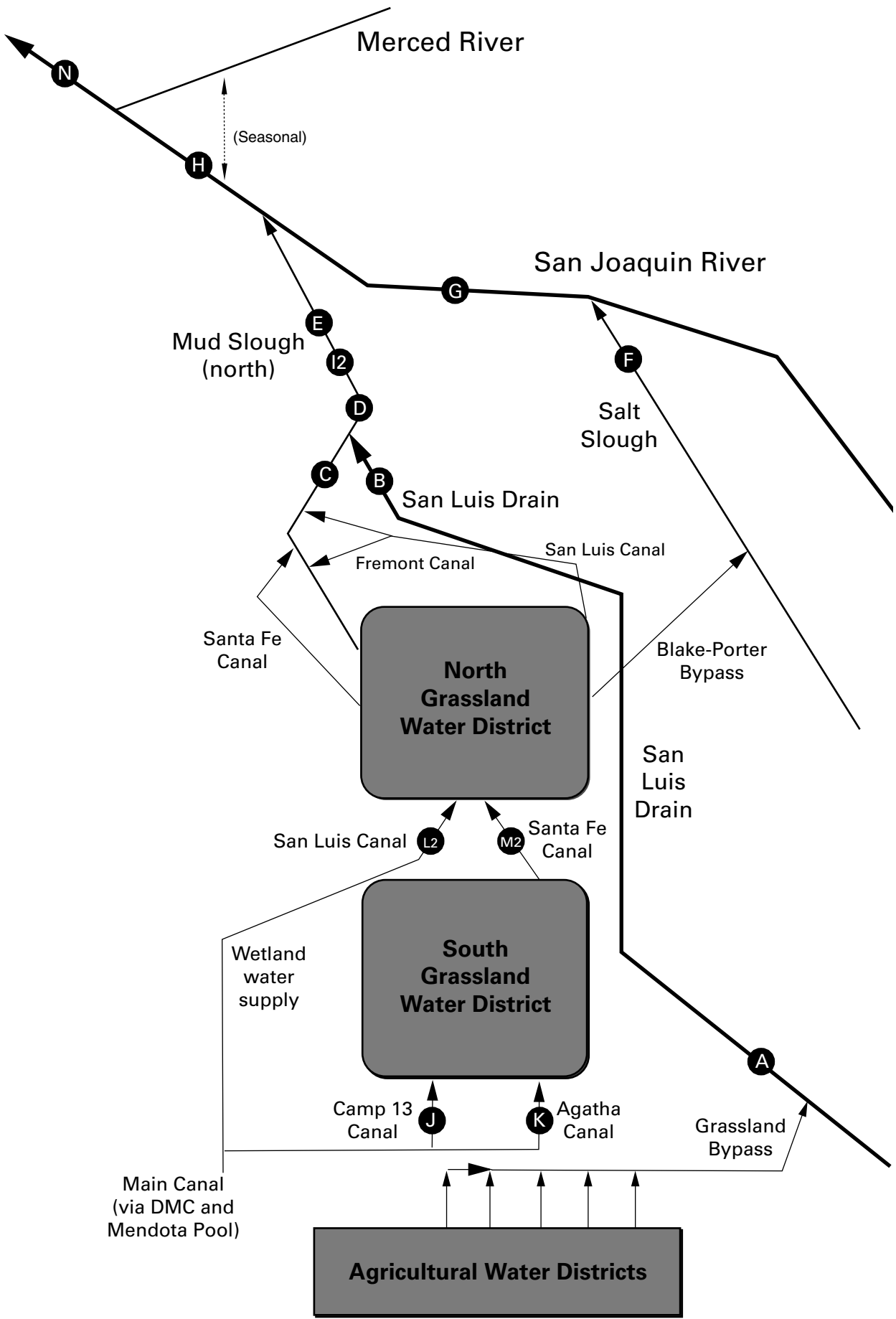
Preliminary Results

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

LIST OF TABLES FOR MONTHLY REPORT**Continuous Monitoring**

1. Continuous water monitoring at Station A (inflow to San Luis Drain), May 2002.
- 2a Continuous water monitoring at Station B (discharge from San Luis Drain), May 2002.
- 2b Monthly selenium discharges from the terminus of the San Luis Drain into Mud Slough compared to load values.
3. Continuous water monitoring at Station D (Mud Slough North downstream of drainage discharges), May 2002.
4. Continuous water monitoring at Station F (Salt Slough at Highway 165), May 2002.
5. Continuous water monitoring at Station N (San Joaquin River at Crow's Landing), May 2002.

Weekly Monitoring

- 6a. Weekly water quality monitoring at Station A (inflow to San Luis Drain), taken from grab samples.
- 6b. Weekly water quality monitoring at Station A (inflow to San Luis Drain), taken from composite samples.
7. Weekly water quality monitoring at Station B (discharge from San Luis Drain).
8. Weekly water quality monitoring at Station C (Mud Slough North upstream of drainage discharge).
9. Weekly water quality monitoring at Station D (Mud Slough North downstream of drainage discharge).
10. Weekly water quality monitoring at Station I2 (Mud Slough backwater downstream of Station D).
11. Weekly water quality monitoring at Station F (Salt Slough at Lander Avenue).
12. Weekly water quality monitoring at Station J (Camp 13 Ditch).
13. Weekly water quality monitoring at Station K (Agatha Canal).
14. Weekly water quality monitoring at Station L2 (San Luis Canal at splits).
15. Weekly water quality monitoring at Station M2 (Santa Fe Canal at weir).
16. Weekly water quality monitoring at Station G (San Joaquin River at Fremont Ford).
17. Weekly water quality monitoring at Station H (San Joaquin River at Hills Ferry).
18. Weekly water quality monitoring at Station N (San Joaquin River at Crow's Landing).

Monthly Monitoring

19. Summary of fathead minnow (*Pimephales promelas*) larvae survival in 7-day tests using water samples collected from June 2001 to May 2002.
20. Summary of fathead minnow (*Pimephales promelas*) larvae growth in 7-day tests using water samples collected from June 2001 to May 2002.
21. Summary of *Daphnia magna* survival in 7-day tests using water samples collected from June 2001 to May 2002.
22. Summary of *Daphnia magna* reproduction in 7-day tests using water samples collected from June 2001 to May 2002.
23. Summary of *Selenastrum capricornutum* growth in 4-day tests using water samples collected from June 2001 to May 2002.
24. Summary of selenium concentrations in grab water samples collected at study stations for use in laboratory toxicity tests, March 2002 to May 2002.
25. Summary of total suspended solids concentrations in grab water samples collected from March 2002 to May 2002.
26. Explanations of footnotes and agency abbreviations.

Table 1. Continuous water monitoring at Station A (inflow to San Luis Drain), May 2002.

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Specific Conductance
DATA SOURCE	SLDMWA	SLDMWA
UNITS	cfs	µS/cm
May-01-2002	42	4,550
May-02-2002	38	4,560
May-03-2002	37	4,670
May-04-2002	35	4,690
May-05-2002	33	4,730
May-06-2002	31	4,750
May-07-2002	33	4,560
May-08-2002	35	4,620
May-09-2002	33	4,730
May-10-2002	32	5,100
May-11-2002	31	5,030
May-12-2002	31	4,850
May-13-2002	31	4,760
May-14-2002	34	4,770
May-15-2002	34	4,770
May-16-2002	34	4,720
May-17-2002	33	3,310
May-18-2002	35	NA
May-19-2002	40	NA
May-20-2002	51	NA
May-21-2002	56	NA
May-22-2002	54	NA
May-23-2002	55	3,650
May-24-2002	52	3,870
May-25-2002	52	3,950
May-26-2002	57	3,930
May-27-2002	51	3,980
May-28-2002	53	4,210
May-29-2002	55	4,110
May-30-2002	62	4,160
May-31-2002	56	4,230
Mean	42	4,430

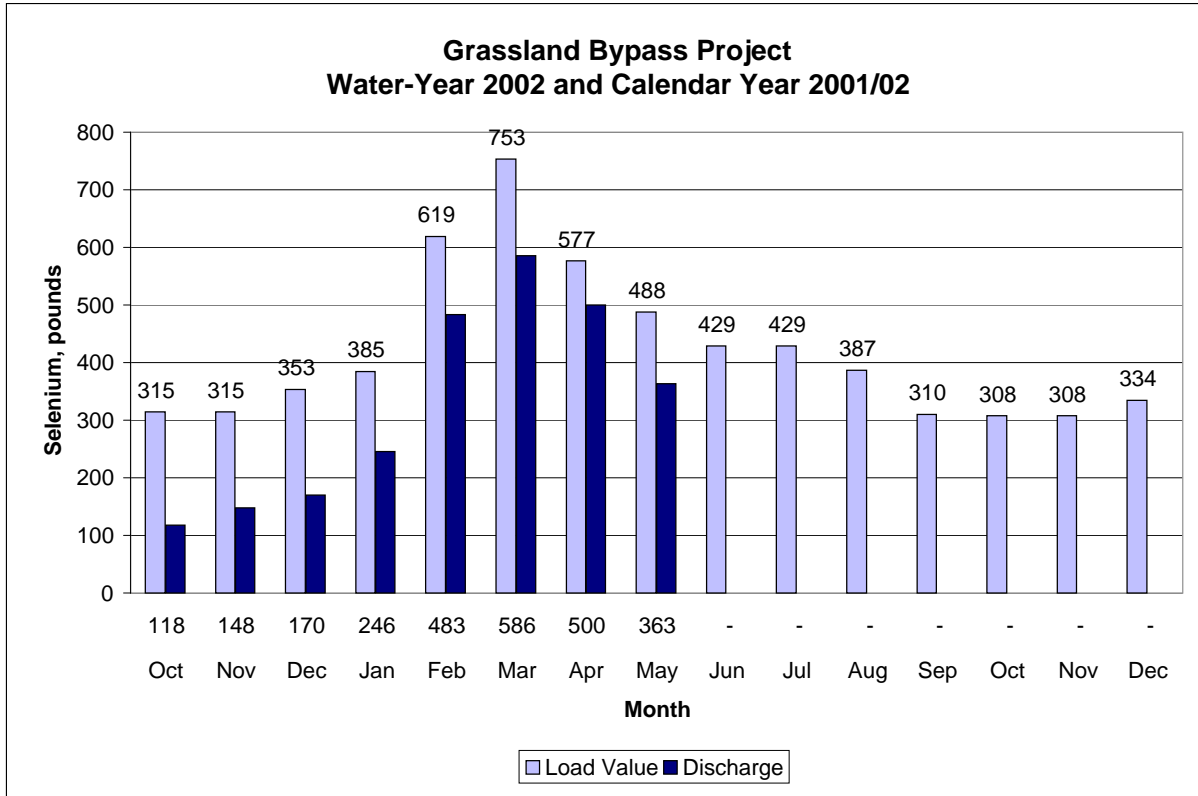
Table 2a. Continuous water monitoring at Station B (discharge from San Luis Drain), May 2002.

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Temperature	Boron	Specific Conductance	Selenium (total)	Selenium (total) Load
DATA SOURCE	USGS	USGS	CVRWQCB	CVRWQCB	CVRWQCB	Computed
UNITS	cfs	°C	mg/L	µS/cm	µg/L	lbs
May-01-2002	46	17.6	P	5,260	75.3	18.7
May-02-2002	43	18.9	P	5,060	73.0	16.9
May-03-2002	40	19.9	P	4,910	72.9	15.7
May-04-2002	39	20.3	P	4,890	70.8	14.9
May-05-2002	37	21.3	P	4,730	66.4	13.3
May-06-2002	33	22.1	P	4,620	56.0	10.0
May-07-2002	32	22.1	P	4,790	60.9	10.5
May-08-2002	36	20.9	P	4,920	65.8	12.8
May-09-2002	35	20.9	P	4,890	65.0	12.3
May-10-2002	34	20.8	P	5,130	59.1	10.8
May-11-2002	34	20.2	P	5,080	55.2	10.1
May-12-2002	31	20.9	P	5,020	54.8	9.2
May-13-2002	32	21.7	P	5,000	52.8	9.1
May-14-2002	32	22.0	P	5,060	55.4	9.6
May-15-2002	35	22.6	P	5,240	59.1	11.2
May-16-2002	36	22.9	P	5,160	56.9	11.0
May-17-2002	35	23.1	P	4,980	51.7	9.8
May-18-2002	33	23.3	P	4,930	51.7	9.2
May-19-2002	36	22.7	P	5,030	55.1	10.7
May-20-2002	42	20.9	P	4,820	51.0	11.6
May-21-2002	53	19.8	P	4,820	49.9	14.3
May-22-2002	57	20.3	P	4,010	34.7	10.7
May-23-2002	57	20.7	P	4,090	41.6	12.8
May-24-2002	56	21.8	P	4,180	45.7	13.8
May-25-2002	52	23.1	P	3,840	36.6	10.3
May-26-2002	54	23.6	P	3,760	32.2	9.4
May-27-2002	57	23.9	P	3,960	32.7	10.1
May-28-2002	53	24.3	P	4,120	33.4	9.5
May-29-2002	54	25.2	P	4,070	39.7	11.6
May-30-2002	57	26.7	P	4,130	38.2	11.7
May-31-2002	61	27.4	P	4,280	37.1	12.2
Mean	43	22.0	P	4,670	52.6	
Total Acre-feet	2,640				Total (lbs)	363

Load Limitation for May 2002	(lbs)	488
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2b Chart. Monthly selenium discharges from the terminus of the San Luis Drain into Mud Slough compared to load values.



2b Table. Monthly selenium discharges from the terminus of the San Luis Drain into Mud Slough compared to load values.

Month	Discharge	Load Value
UNITS	lbs	lbs
Oct	118	315
Nov	148	315
Dec	170	353
Jan	246	385
Feb	483	619
Mar	586	753
Apr	500	577
May	363	488
Jun	-	429
Jul	-	429
Aug	-	387
Sep	-	310
Oct	-	308
Nov	-	308
Dec	-	334

**Table 3. Continuous water monitoring at Station D
(Mud Slough North downstream of drainage discharges), May 2002.**

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
May-01-2002	52	18.1	4,440
May-02-2002	49	19.2	4,370
May-03-2002	46	20.1	4,160
May-04-2002	45	20.5	4,140
May-05-2002	45	21.3	3,950
May-06-2002	56	21.9	3,220
May-07-2002	53	21.6	3,200
May-08-2002	42	20.5	3,930
May-09-2002	46	20.9	3,910
May-10-2002	53	20.7	3,540
May-11-2002	63	20.4	3,230
May-12-2002	69	21.6	2,990
May-13-2002	63	22.1	3,070
May-14-2002	66	22.0	3,070
May-15-2002	54	22.5	3,630
May-16-2002	56	22.7	3,600
May-17-2002	53	23.0	3,630
May-18-2002	53	23.1	3,490
May-19-2002	50	22.2	3,800
May-20-2002	54	20.4	3,990
May-21-2002	72	19.5	3,880
May-22-2002	77	20.0	3,360
May-23-2002	85	20.5	3,130
May-24-2002	98	21.9	2,930
May-25-2002	95	23.2	2,680
May-26-2002	95	23.6	2,640
May-27-2002	89	23.7	2,910
May-28-2002	76	24.0	3,160
May-29-2002	94	25.1	2,950
May-30-2002	74	26.5	3,440
May-31-2002	74	27.1	3,570
Mean	64	21.9	3,480

Table 4. Continuous water monitoring at Station F (Salt Slough at Highway 165), May 2002.

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
May-01-2002	141	17.5	1,410
May-02-2002	139	19.0	1,510
May-03-2002	127	20.0	1,520
May-04-2002	124	20.5	1,630
May-05-2002	112	21.6	1,680
May-06-2002	116	21.9	1,690
May-07-2002	99	21.1	1,700
May-08-2002	95	20.0	1,790
May-09-2002	97	20.9	1,730
May-10-2002	86	20.6	1,850
May-11-2002	74	20.0	1,920
May-12-2002	82	21.4	1,810
May-13-2002	89	22.2	1,630
May-14-2002	88	21.9	1,580
May-15-2002	80	22.4	1,730
May-16-2002	98	22.6	1,570
May-17-2002	100	22.8	1,420
May-18-2002	123	22.6	1,370
May-19-2002	185	21.4	1,160
May-20-2002	202	19.3	1,130
May-21-2002	210	18.4	1,090
May-22-2002	199	19.4	1,160
May-23-2002	181	20.5	1,210
May-24-2002	191	22.1	1,160
May-25-2002	197	23.4	1,110
May-26-2002	191	23.5	1,110
May-27-2002	153	23.6	1,210
May-28-2002	115	24.1	1,270
May-29-2002	86	25.4	1,450
May-30-2002	94	27.3	1,320
May-31-2002	84	27.5	1,400
Mean	128	21.8	1,460

Table 5. Continuous water monitoring at Station N (San Joaquin River at Crow's Landing), May 2002.

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Temperature	Specific Conductance	Selenium (total)
DATA SOURCE	USGS	USGS	CVRWOCB	CVRWOCB
UNITS	cfs	°C	µS/cm	µg/L
May-01-2002	872	17.6	NA	NA
May-02-2002	1,090	17.7	NA	NA
May-03-2002	1,320	17.7	664	2.4
May-04-2002	1,440	18.0	678	2.0
May-05-2002	1,530	18.7	590	1.9
May-06-2002	1,560	19.0	567	1.6
May-07-2002	1,530	18.9	580	1.6
May-08-2002	1,500	17.9	539	1.1
May-09-2002	1,330	18.4	619	1.4
May-10-2002	1,250	18.7	713	1.9
May-11-2002	1,190	18.7	722	1.9
May-12-2002	1,230	19.2	690	1.6
May-13-2002	1,250	19.5	670	1.5
May-14-2002	1,070	20.0	779	1.6
May-15-2002	931	21.0	872	1.8
May-16-2002	775	NA	895	1.8
May-17-2002	663	NA	1,250	3.0
May-18-2002	597	NA	1,250	2.7
May-19-2002	570	NA	1,280	2.7
May-20-2002	642	19.7	1,210	2.8
May-21-2002	642	19.3	1,100	3.0
May-22-2002	644	19.8	1,180	3.7
May-23-2002	628	19.9	1,140	3.7
May-24-2002	593	NA	1,190	3.3
May-25-2002	596	23.3	1,240	4.2
May-26-2002	633	23.5	1,190	3.6
May-27-2002	658	23.7	1,140	2.8
May-28-2002	612	24.0	1,150	2.8
May-29-2002	574	25.2	1,290	2.9
May-30-2002	557	26.7	1,340	2.9
May-31-2002	517	27.0	1,470	3.2
Mean	935	20.5	970	2.5

Table 6a. Weekly water quality monitoring at Station A (inflow to San Luis Drain), taken from grab samples.

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	.	.	Specific Conductance	Total Suspended Solids	.	.	.
DATA SOURCE	SLDMWA	.	.	CVRWQCB	CVRWQCB	.	.	.
UNITS	cfs	.	.	µS/cm	mg/L	.	.	.
Mar-06-2002	57	.	.	4,700	140	.	.	.
Mar-13-2002	55	.	.	4,480	140	.	.	.
Mar-20-2002	57	.	.	4,370	120	.	.	.
Mar-27-2002	37	.	.	5,430	41	.	.	.
Apr-03-2002	35	.	.	5,470	P	.	.	.
Apr-10-2002	34	.	.	5,360	50	.	.	.
Apr-17-2002	45	.	.	4,450	66	.	.	.
Apr-24-2002	43	.	.	4,870	P	.	.	.
May-01-2002	42	.	.	4,800	130	.	.	.
May-08-2002	35	.	.	4,990	P	.	.	.
May-15-2002	34	.	.	5,090	110	.	.	.
May-22-2002	54	.	.	3,680	P	.	.	.
May-29-2002	55	.	.	4,120	P	.	.	.

Table 6b. Weekly water quality monitoring at Station A (inflow to San Luis Drain), taken from composite samples.

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	.	.	Specific Conductance	.	Selenium (total)	.	Boron
DATA SOURCE	SLDMWA	.	.	CVRWQCB	.	CVRWQCB	.	CVRWQCB
UNITS	cfs	.	.	µS/cm	.	µg/L	.	mg/L
Mar-05-2002	55	.	.	4,800	.	67.8	.	P
Mar-12-2002	60	.	.	4,680	.	64.6	.	7.1
Mar-19-2002	64	.	.	4,460	.	64.0	.	6.5
Mar-26-2002	38	.	.	5,360	.	71.2	.	7.7
Apr-02-2002	34	.	.	5,430	.	79.2	.	7.9
Apr-09-2002	34	.	.	5,420	.	79.2	.	8.1
Apr-16-2002	44	.	.	NA	.	74.6	.	7.4
Apr-23-2002	46	.	.	4,900	.	73.5	.	7.6
Apr-30-2002	47	.	.	5,030	.	71.7	.	7.4
May-07-2002	33	.	.	4,900	.	57.7	.	7.4
May-14-2002	34	.	.	5,070	.	58.3	.	8.2
May-21-2002	56	.	.	NA	.	40.9	.	P
May-30-2002	62	.	.	NA	.	37.9	.	P

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

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Temperature	pH	Specific Conductance	Total Suspended Solids	Selenium (total)	.	Boron
DATA SOURCE	USGS	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	.	CVRWQCB
UNITS	cfs	°C		µS/cm	mg/L	µg/L	.	mg/L
Mar-07-2002	60	14.9	8.4	4,500	P	57.7	.	6.9
Mar-14-2002	60	13.6	8.6	4,770	42	65.6	.	6.5
Mar-21-2002	58	14.2	7.8	4,140	P	60.4	.	5.9
Mar-28-2002	40	17.6	8.5	5,350	41	68.8	.	P
Apr-04-2002	35	19.7	8.7	5,530	P	69.8	.	8.7
Apr-11-2002	34	19.6	8.8	5,540	22	82.8	.	8.2
Apr-18-2002	46	16.4	8.7	5,210	26	72.2	.	7.6
Apr-25-2002	42	20.6	8.5	5,250	34	79.4	.	P
May-02-2002	43	17.1	8.4	4,960	70	69.8	.	7.2
May-09-2002	35	19.6	8.5	4,920	32	62.8	.	7.4
May-16-2002	36	21.5	8.5	5,100	31	55.1	.	7.9
May-23-2002	57	18.0	8.4	3,860	P	42.5	.	P
May-30-2002	57	27.2	8.2	4,060	P	34.1	.	P

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

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Temperature	pH	Specific Conductance	Selenium (total)	Boron
DATA SOURCE	calculated **	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	°C		µS/cm	µg/L	mg/L
Mar-07-2002	93	14.6	8.1	2,290	0.9	2.1
Mar-14-2002	65	11.8	7.9	2,820	0.7	2.3
Mar-21-2002	75	15.6	8.4	2,870	0.7	2.6
Mar-28-2002	75	19.1	8.4	3,200	0.5	4.1
Apr-04-2002	18	17.8	8.1	3,290	0.4	3.0
Apr-11-2002	7	18.9	8.1	3,820	0.5	3.2
Apr-18-2002	13	14.9	8.0	2,080	1.2	1.7
Apr-25-2002	24	20.5	7.8	1,410	0.8	1.1
May-02-2002	6	15.6	8.2	3,050	0.4	2.5
May-09-2002	11	20.5	8.2	1,260	0.6	2.1
May-16-2002	20	21.7	7.1	1,530	0.7	1.2
May-23-2002	28	16.6	8.0	1,660	0.5	P
May-30-2002	17	31.4	8.3	2,580	0.5	P

** Calculated flow value. Flow at Station C = flow at Station D - flow at Station B.

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

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
Mar-07-2002	153	14.8	8.2	3,220	23.3	3.9
Mar-14-2002	125	12.3	8.3	3,750	26.0	4.1
Mar-21-2002	133	14.8	8.2	3,440	24.6	4.0
Mar-28-2002	115	18.5	8.4	3,890	20.4	P
Apr-04-2002	53	18.7	8.4	4,720	39.2	6.4
Apr-11-2002	41	19.0	8.4	5,140	54.9	6.8
Apr-18-2002	59	15.7	8.4	4,130	47.8	5.3
Apr-25-2002	66	20.5	8.2	3,650	43.3	P
May-02-2002	49	16.6	8.3	4,770	53.5	6.5
May-09-2002	46	19.6	8.3	4,260	41.3	5.8
May-16-2002	56	20.9	8.3	3,550	32.5	4.8
May-23-2002	85	17.2	8.1	3,390	29.0	P
May-30-2002	74	27.3	8.1	3,310	26.5	P

Table 10. Weekly water quality monitoring at Station I2 (Mud Slough backwater downstream of Station D).

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER		pH	Specific Conductance	Turbidity	Selenium	Boron
DATA SOURCE		USBR	USBR	USBR	USBR	USBR
UNITS			µS/cm	NTU	µg/L	mg/L
Mar-05-2002	.	8.0	3,080	40.3	18.8	3.0
Mar-12-2002	.	8.2	4,070	39.5	21.6	3.5
Mar-18-2002	.	8.4	4,080	12.9	30.0	3.9
Mar-26-2002	.	8.6	4,890	62.0	15.4	3.9
Apr-02-2002	.	7.7	6,910	17.0	17.0	5.2
Apr-08-2002	.	8.4	4,700	21.8	47.1	6.1
Apr-17-2002	.	8.3	4,300	25.4	56.7	6.7
Apr-23-2002	.	7.8	3,880	26.4	32.4	4.6
Apr-30-2002	.	8.5	4,680	22.2	51.1	6.4
May-07-2002	.	8.0	4,180	34.0	26.0	4.6
May-14-2002	.	8.4	3,320	23.0	22.0	4.0
May-21-2002	.	8.5	1,820	24.0	28.8	5.0
May-28-2002	.	8.9	3,930	33.3	21.8	5.2

Table 11. Weekly water quality monitoring at Station F (Salt Slough at Lander Avenue).

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
Mar-07-2002	319	14.4	7.7	1,620	1.1	2.4
Mar-14-2002	262	13.3	7.9	1,820	0.8	1.1
Mar-21-2002	313	15.5	7.6	1,830	0.9	1.2
Mar-28-2002	213	18.6	7.8	2,030	0.6	P
Apr-04-2002	175	17.9	7.7	1,780	0.7	0.9
Apr-11-2002	147	18.4	7.7	1,660	<0.4	0.3
Apr-18-2002	136	14.6	7.8	1,640	0.6	0.7
Apr-24-2002	130	20.0	7.7	1,790	0.5	P
May-02-2002	139	16.4	8.1	1,560	0.5	0.7
May-09-2002	97	18.3	7.7	1,670	0.5	0.7
May-16-2002	98	20.5	7.7	1,570	0.5	0.7
May-23-2002	181	17.5	7.6	1,120	0.4	P
May-30-2002	94	25.9	7.6	1,340	0.6	P

Table 12. Weekly water quality monitoring at Station J (Camp 13 Ditch).

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	.	.	Specific Conductance	Selenium (total)	Boron
DATA SOURCE	SLDMWA ^{††}	.	.	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	.	.	µS/cm	µg/L	mg/L
Mar-06-2002	3	.	.	1,100	2.2	P
Mar-13-2002	3	.	.	933	3.6	0.8
Mar-20-2002	3	.	.	906	2.2	0.7
Mar-27-2002	3	.	.	992	3.6	0.8
Apr-03-2002	3	.	.	1,550	2.7	2.0
Apr-10-2002	3	.	.	1,360	3.1	1.6
Apr-17-2002	10	.	.	1,230	1.9	1.2
Apr-24-2002	35	.	.	583	1.1	0.3
May-01-2002	35	.	.	569	1.0	0.3
May-08-2002	10	.	.	557	1.3	0.3
May-15-2002	10	.	.	537	1.2	0.4
May-22-2002	10	.	.	641	1.2	P
May-29-2002	0	.	.	656	1.3	P

Table 13. Weekly water quality monitoring at Station K (Agatha Canal).

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	.	.	Specific Conductance	Selenium (total)	Boron
DATA SOURCE	SLDMWA ^{††}	.	.	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	.	.	µS/cm	µg/L	mg/L
Mar-06-2002	0	.	.	1,610	1.2	P
Mar-13-2002	0	.	.	2,510	1.0	3.9
Mar-20-2002	0	.	.	2,600	1.2	4.1
Mar-27-2002	0	.	.	2,800	1.2	4.2
Apr-03-2002	0	.	.	2,690	1.2	4.1
Apr-10-2002	0	.	.	2,670	1.1	4.0
Apr-17-2002	10	.	.	2,230	1.4	3.0
Apr-24-2002	20	.	.	690	1.4	0.5
May-01-2002	65	.	.	524	0.8	0.2
May-08-2002	80	.	.	511	1.1	0.2
May-15-2002	80	.	.	536	0.8	0.2
May-22-2002	60	.	.	576	0.8	P
May-29-2002	30	.	.	572	0.9	P

Table 14. Weekly water quality monitoring at Station L2 (San Luis Canal at splits).

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	.	.	Specific Conductance	Selenium (total)	Boron
DATA SOURCE	SLDMWA ¹¹	.	.	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	.	.	µS/cm	µg/L	mg/L
Mar-06-2002	82	.	.	994	2.1	P
Mar-13-2002	67	.	.	1,080	2.0	1.0
Mar-20-2002	76	.	.	899	1.9	0.6
Mar-27-2002	72	.	.	870	1.9	0.6
Apr-03-2002	20	.	.	997	2.8	0.7
Apr-10-2002	40	.	.	947	1.8	0.7
Apr-17-2002	60	.	.	1,020	1.8	0.7
Apr-24-2002	60	.	.	744	1.2	0.5
May-01-2002	40	.	.	649	1.1	0.4
May-08-2002	10	.	.	861	1.3	0.7
May-15-2002	50	.	.	584	1.1	0.3
May-22-2002	30	.	.	697	1.1	P
May-29-2002	0	.	.	1,360	1.3	P

Table 15. Weekly water quality monitoring at Station M2 (Santa Fe Canal at weir).

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	.	.	Specific Conductance	Selenium (total)	Boron
DATA SOURCE	SLDMWA ¹¹	.	.	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	.	.	µS/cm	µg/L	mg/L
Mar-06-2002	20	.	.	2,180	1.2	P
Mar-13-2002	20	.	.	2,550	1.3	2.9
Mar-20-2002	20	.	.	2,460	1.1	2.9
Mar-27-2002	20	.	.	2,210	0.9	2.5
Apr-03-2002	26	.	.	2,540	1.3	2.8
Apr-10-2002	17	.	.	2,160	1.4	2.3
Apr-17-2002	3	.	.	1,610	1.6	1.0
Apr-24-2002	34	.	.	1,090	1.2	1.1
May-01-2002	74	.	.	1,340	1.1	1.9
May-08-2002	90	.	.	1,130	1.1	0.8
May-15-2002	57	.	.	785	1.2	0.5
May-22-2002	65	.	.	1,030	1.1	P
May-29-2002	72	.	.	1,280	1.2	P

Table 16. Weekly water quality monitoring at Station G (San Joaquin River at Fremont Ford).

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
Mar-07-2002	.	14.8	7.6	1,650	0.9	1.1
Mar-14-2002	.	13.3	7.4	1,850	0.8	1.0
Mar-21-2002	.	14.9	7.3	1,760	0.7	1.0
Mar-28-2002	.	19.5	7.8	2,730	0.6	P
Apr-04-2002	.	18.9	7.9	1,930	0.6	0.8
Apr-11-2002	.	18.6	7.2	3,830	0.6	0.8
Apr-18-2002	.	15.4	7.8	1,990	0.4	0.7
Apr-25-2002	.	19.5	7.8	2,080	0.4	P
May-02-2002	.	17.2	7.3	2,000	<0.4	0.7
May-09-2002	.	NA	NA	NA	NA	NA
May-16-2002	.	20.6	7.8	2,330	<0.4	0.7
May-23-2002	.	16.9	7.6	1,240	0.5	P
May-30-2002	.	26.3	7.8	1,950	0.4	P

Table 17. Weekly water quality monitoring at Station H (San Joaquin River at Hills Ferry).

(Collected data intended for use with biological monitoring.)

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	.	.	.	Specific Conductance	Selenium (total)	Boron
DATA SOURCE	.	.	.	SLDMWA	SLDMWA	SLDMWA
UNITS	.	.	.	µS/cm	µg/L	mg/L
Mar-12-2002	.	.	.	2,330	7.3	1.7
Mar-19-2002	.	.	.	2,240	7.7	1.7
Mar-27-2002	.	.	.	2,510	6.1	1.8
Apr-02-2002	.	.	.	2,570	7.6	1.8
Apr-09-2002	.	.	.	2,740	8.8	1.9
Apr-16-2002	.	.	.	2,350	8.9	1.7
Apr-23-2002	.	.	.	2,330	9.5	1.7
Apr-30-2002	.	.	.	2,510	13.2	1.8
May-07-2002	.	.	.	2,080	5.3	1.2
May-16-2002	.	.	.	2,840	10.1	2.0
May-21-2002	.	.	.	1,960	7.9	1.5
May-28-2002	.	.	.	2,010	6.5	1.5

Table 18. Weekly water quality monitoring at Station N (San Joaquin River at Crow's Landing).

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
Mar-07-2002	924	15.3	7.9	1,680	4.7	1.4
Mar-14-2002	855	13.7	8.1	1,820	5.2	1.3
Mar-21-2002	896	15.6	8.0	1,240	4.7	1.4
Mar-28-2002	776	18.8	8.0	1,830	3.4	1.2
Apr-04-2002	605	19.1	8.0	1,890	3.8	1.3
Apr-11-2002	594	19.6	8.0	1,680	3.9	1.1
Apr-18-2002	698	16.1	8.0	1,380	3.9	0.9
Apr-25-2002	804	19.3	7.9	1,120	3.5	0.7
May-02-2002	1,090	16.1	7.9	752	2.9	0.5
May-09-2002	1,330	NA	NA	NA	NA	NA
May-16-2002	775	NA	NA	NA	2.1	0.7
May-23-2002	628	18.0	7.6	1,150	3.8	P
May-30-2002	557	24.8	7.9	1,330	3.4	P

Table 19. Summary of fathead minnow (*Pimephales promelas*) larvae survival in 7-day tests using water samples collected from June 2001 to May 2002. 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	%	%	%	%	%	%
Jun-2001	88	98	98	98	98	100
Jul-2001	90	93	98	100	93	98
Aug-2001	95	95	98	95	98	98
Sep-2001	98	100	90	100	100	98
Oct-2001	100	98	100	100	100	100
Nov-2001	98	83ε	60*	88	100	100
Dec-2001	98	55*	68*	90	98	100
Jan-2002	83	95	98	100	100	98
Feb-2002	93	90	93	95	93	100
Mar-2002	98	90	98	80	88	98
Apr-2002	93	93	85	95	95	98
May-2002	98	95	95	90	85	88

Table 20. Summary of fathead minnow (*Pimephales promelas*) larvae growth in 7-day tests using water samples collected from June 2001 to May 2002. 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
Jun-2001	0.61*	0.83	0.85	0.85	0.74	0.65
Jul-2001	0.42	0.39	0.48	0.47	0.45	0.44
Aug-2001	0.43	0.44	0.35	0.38	0.36	0.36
Sep-2001	0.43	0.43	0.44	0.42	0.34	0.36
Oct-2001	0.63	0.71	0.78	0.65	0.66	0.58
Nov-2001	0.70	0.49	0.49	0.59	0.67	0.52
Dec-2001	0.48	0.34*	0.41	0.55	0.47	0.50
Jan-2002	0.39	0.41	0.44	0.51	0.44	0.40
Feb-2002	0.55	0.47	0.58	0.55	0.52	0.42
Mar-2002	0.40	0.47	0.50	0.41	0.43	0.48
Apr-2002	0.64	0.63	0.50	0.63	0.55	0.58
May-2002	0.63	0.70	0.62	0.65	0.61	0.56

Table 21. Summary of *Daphnia magna* survival in 7-day tests using water samples collected from June 2001 to May 2002. 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	%	%	%	%	%	%
Jun-2001	50*	70*	70*	90	100	100
Jul-2001	100	100	60*	80	90	90
Aug-2001	50*	100	30*	100	90	90
Sep-2001	80	100	90	100	90	80
Oct-2001	90	100	90	90	70*†	90
Nov-2001	100	89	90	100	80	90
Dec-2001	90	100	90	90	100	100
Jan-2002	100	90	80	100	100	67†
Feb-2002	100	80	90	90	100	100
Mar-2002	90	100	100	100	90	100
Apr-2002	100	90	100	90	100	100
May-2002	80	100	80	100	89	30†

Table 22. Summary of *Daphnia magna* reproduction in 7-day tests using water samples collected from June 2001 to May 2002. 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
Jun-2001	18.9*	28.3*	27.6*	47.9	44.5	36.4
Jul-2001	25.3	28.5	16.8	17.7	26.2	15.9
Aug-2001	11.7*	42.9	15.5*	52.5	27.1	36.3
Sep-2001	27.7	31.5	32.5	31.5	25.6	20.7
Oct-2001	39.5	39.1	29.8	35.3	21.1	31.7
Nov-2001	27.4	28.2	34.2	33.4	25.4	29.6
Dec-2001	41.3	45.9	43.3	42.4	45.1	36.7
Jan-2002	29.4	29.3	23.6	30.5	30.1	11.9
Feb-2002	42.8(*)	37.7	42.0	40.6	47.4	32.4
Mar-2002	47.2	47.7	49.8	45.8	54.5	50.2
Apr-2002	56.2	43.4	59.8	49.3	49.5	47.3
May-2002	26.4	36.5	30.7	37.2	27.9	2.9†

(*) Although reproduction values were less at Stations C, D, and F, they were not statistically different from the DMC water. This was due to the increased survival rate at Station B.

Table 23. Summary of *Selenastrum capricornutum* growth in 4-day tests using water samples collected from June 2001 to May 2002. 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
Jun-2001	4.2*	12.9*	10.3*	14.7*	21.8	16.4
Jul-2001	8.3	8.5	8.5	9.4	8.0	9.1
Aug-2001	10.4*	12.4	3.0*	15.6	13.8	10.0
Sep-2001	6.5*	13.0	11.3	12.3	10.8	9.6
Oct-2001	9.1	10.7	11.3	11.4	10.3	9.3
Nov-2001	6.0*	11.1	11.0	10.0	9.2 †††	6.4 †††
Dec-2001	7.5*	9.4	9.6	9.3	8.9 †††	9.1 †††
Jan-2002	6.32*†††	19.2	17.4	24.7	15.1	10.1
Feb-2002	8.7*	17.3	14.9*	12.7*	18.2	12.6
Mar-2002	8.7*	14.2*	12.9*	18.3	17.8	13.5
Apr-2002	1.44*	7.0	4.4*	6.6	5.8	33.0
May-2002	4.8 ‡	7.9	6.1	6.3	7.1 †††	3.8 ‡

Table 24. Summary of selenium concentrations in grab water samples collected at study stations for use in laboratory toxicity tests, March 2002 to May 2002.

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
Mar-25-2002	78	<0.4	24	0.4	1.7**
Mar-27-2002	77	<0.4	27	0.6	<0.4
Mar-29-2002	81	<0.4	26	<0.4	<0.4
Apr-22-2002	62	0.6	52	0.7	0.4
Apr-24-2002	78	0.8	37	0.8	0.4
Apr-26-2002	70	0.7	48	0.7	<0.4
May-20-2002	52	0.7	38	0.5	<0.4
May-22-2002	34	0.6	25	0.5	<0.4
May-24-2002	46	0.8	27	0.5	<0.4

Table 25. Summary of total suspended solids concentrations in grab water samples collected from March 2002 to May 2002.

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	SLDMWA	SLDMWA	SLDMWA	SLDMWA
UNITS	mg/L	mg/L	mg/L	mg/L	mg/L
Mar-25-2002	40	94	56	46	16
Mar-27-2002	38	108	80	75	27
Mar-29-2002	61	163	118	64	34
Apr-22-2002	59	45	85	129	12
Apr-24-2002	45	82	82	104	14
Apr-26-2002	31	127	93	198	37
May-20-2002	42	52	48	139	2
May-22-2002	47	79	84	138	4
May-24-2002	43	55	54	148	8

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
e	Estimated value
.	Not applicable
<	Less than MDL. If needed in calculation, use 1/2 MDL
NA	Not analyzed - operator error, data will not be available in the future
NP	Not Provided. Data may be available in the future.
NT	Not tested
P	Pending, data not available at this time but will be available in the future
*	Significantly reduced from Delta Mendota Canal (p<0.05)
**	Sample re-analyzed and result confirmed.
†	DMC water failed to meet the survival (>80%) acceptability criteria.
††	Data from records of the Grassland Water District. Data is not subjected to the criteria documented in the Compliance Monitoring Program for the Use and Operation of the Grassland Bypass Project (1996) nor the Quality Assurance Project Plan for the GBP.
†††	DMC water failed to meet the reproduction (>10 neonates/adult) acceptability criteria.
††††	DMC water failed to meet minimum growth (10 ⁶ cell/mL) acceptability criteria.
‡	Control value exceeds suggested maximum variance (20%) acceptability criteria.
‡‡	Fungal growth observed on test organisms.
‡‡‡	Failed cell density requirement of 1E6 cells.
#	New testing laboratory with reporting limit of 0.4 µg/L as of June 1998.
❖	Based on definitive bioassay, NOEC is 50 percent

ε EPA Station C split sample results significantly different. See Table 19.

LOCATION	Station B	Station C	Station D	Station F	Delta Mendota Canal	Laboratory Control
DATA SOURCE	EPA	EPA	EPA	EPA	EPA	EPA
UNITS	%	%	%	%	%	%
Nov-2001	100	58	64	90	100	100