

GRASSLAND BYPASS PROJECT

MONTHLY DATA REPORT

June 2005

September 9, 2005

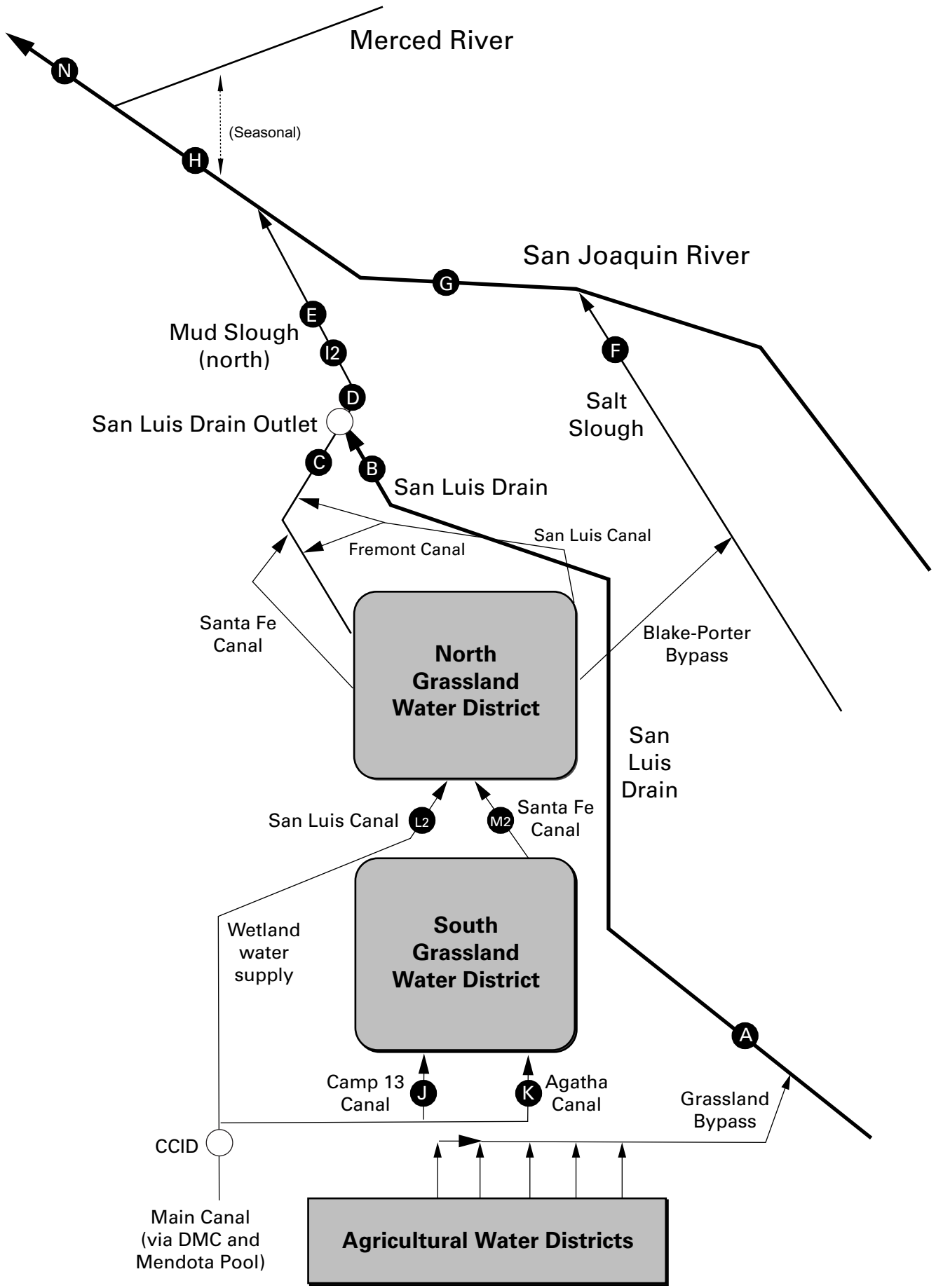
Preliminary Results

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), June 2005.

See Table 27 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Specific Conductance
DATA SOURCE	SLDMWA	SLDMWA
UNITS	cfs	µS/cm
Jun-01-2005	48	4,440
Jun-02-2005	45	4,330
Jun-03-2005	41	4,100
Jun-04-2005	39	4,010
Jun-05-2005	40	3,930
Jun-06-2005	38	4,180
Jun-07-2005	42	3,940
Jun-08-2005	42	4,190
Jun-09-2005	47	4,190
Jun-10-2005	55	3,930
Jun-11-2005	53	3,870
Jun-12-2005	50	4,110
Jun-13-2005	51	4,370
Jun-14-2005	47	4,620
Jun-15-2005	36	4,370
Jun-16-2005	33	4,620
Jun-17-2005	36	4,480
Jun-18-2005	38	4,430
Jun-19-2005	41	4,480
Jun-20-2005	44	4,410
Jun-21-2005	46	4,250
Jun-22-2005	47	4,140
Jun-23-2005	48	4,010
Jun-24-2005	50	3,790
Jun-25-2005	51	3,840
Jun-26-2005	54	3,860
Jun-27-2005	53	3,860
Jun-28-2005	49	4,280
Jun-29-2005	49	4,220
Jun-30-2005	53	4,330
.	.	.
Mean	46	4,190

Table 2a. Continuous water monitoring at Station B (discharge from San Luis Drain), June 2005.

See Table 27 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
Jun-01-2005	50	24.3	8.5	4,260	48.9	13.2
Jun-02-2005	52	22.7	9.0	4,470	49.6	13.9
Jun-03-2005	48	23.3	P	4,510	47.4	12.3
Jun-04-2005	44	23.8	P	4,680	46.9	11.1
Jun-05-2005	42	22.8	P	4,360	41.0	9.3
Jun-06-2005	43	21.9	P	4,390	38.8	9.0
Jun-07-2005	42	21.2	P	4,370	35.6	8.1
Jun-08-2005	45	21.2	P	4,220	32.4	7.9
Jun-09-2005	46	21.9	P	4,000	31.4	7.8
Jun-10-2005	48	23.1	P	4,380	38.4	9.9
Jun-11-2005	52	23.8	P	4,040	35.2	9.9
Jun-12-2005	52	23.6	P	4,410	44.8	12.6
Jun-13-2005	50	23.8	P	4,150	39.9	10.8
Jun-14-2005	49	25.2	P	4,040	35.4	9.4
Jun-15-2005	44	25.5	P	4,320	39.6	9.4
Jun-16-2005	35	24.5	P	4,270	40.0	7.6
Jun-17-2005	32	22.6	P	4,770	46.6	8.0
Jun-18-2005	35	22.7	P	4,840	50.3	9.5
Jun-19-2005	38	22.9	P	4,600	37.4	7.7
Jun-20-2005	41	23.4	P	4,910	39.2	8.7
Jun-21-2005	44	23.9	P	4,790	43.0	10.2
Jun-22-2005	47	24.1	P	4,700	43.6	11.1
Jun-23-2005	47	24.8	P	4,660	46.2	11.7
Jun-24-2005	48	24.7	P	4,650	47.4	12.3
Jun-25-2005	51	24.5	P	4,490	42.0	11.6
Jun-26-2005	52	24.2	P	4,490	41.6	11.7
Jun-27-2005	55	24.4	P	4,030	38.2	11.3
Jun-28-2005	53	24.7	P	4,010	36.3	10.4
Jun-29-2005	51	25.6	P	4,050	44.5	12.2
Jun-30-2005	50	26.7	P	4,020	42.0	11.3
Mean	46	23.7	8.8	4,400	41.5	10.3
Total Acre-feet	2,750					
Total (lbs)						310

Load Limitation for June 2005 (lbs)	354
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Table 2b. Continuous water monitoring at San Luis Drain Outlet, June 2005.

Note: This is unofficial data reported for comparison with Station B.

See Table 27 for explanation of footnotes and agency abbreviations.

PARAMETER	San Luis Drain Outlet Flow	Selenium (total) *	Selenium (total) Load
DATA SOURCE	USGS	CVRWQCB	Computed
UNITS	cfs	µg/L	lbs
Jun-01-2005	47	48.9	12.4
Jun-02-2005	48	49.6	13.0
Jun-03-2005	46	47.4	11.9
Jun-04-2005	43	46.9	10.8
Jun-05-2005	39	41.0	8.7
Jun-06-2005	40	38.8	8.4
Jun-07-2005	39	35.6	7.5
Jun-08-2005	42	32.4	7.4
Jun-09-2005	43	31.4	7.3
Jun-10-2005	48	38.4	10.0
Jun-11-2005	55	35.2	10.5
Jun-12-2005	53	44.8	12.8
Jun-13-2005	52	39.9	11.2
Jun-14-2005	53	35.4	10.1
Jun-15-2005	47	39.6	10.1
Jun-16-2005	37	40.0	8.0
Jun-17-2005	34	46.6	8.5
Jun-18-2005	36	50.3	9.7
Jun-19-2005	39	37.4	7.8
Jun-20-2005	41	39.2	8.6
Jun-21-2005	44	43.0	10.1
Jun-22-2005	47	43.6	11.0
Jun-23-2005	47	46.2	11.7
Jun-24-2005	48	47.4	12.2
Jun-25-2005	51	42.0	11.5
Jun-26-2005	52	41.6	11.7
Jun-27-2005	54	38.2	11.1
Jun-28-2005	53	36.3	10.4
Jun-29-2005	51	44.5	12.2
Jun-30-2005	50	42.0	11.4
Mean	46	41.5	10.3
Total Acre-feet	2,740		
Total (lbs)			308

The US Geological Survey determines flow at Station B through continuous measurements of stage that is rated for a known cross-section. These flow data, listed in Table 2a, are verified with frequent current meter measurements.

Monitoring and Reporting Program No. 5-101-234 states:

"Samples representative of the discharge shall be collected from the San Luis Drain at the footbridge between Gun Club Road and the terminus (Site B)."

Accurate flow measurements are necessary to determine compliance with selenium load limits specified in Waste Discharge Requirement Order No. 5-101-234.

The accumulation of sediments, as documented in the 2001 Annual Report, have caused irregularities in flow measurements at Station B, resulting in "shifts" in the relationship between stage and discharge.

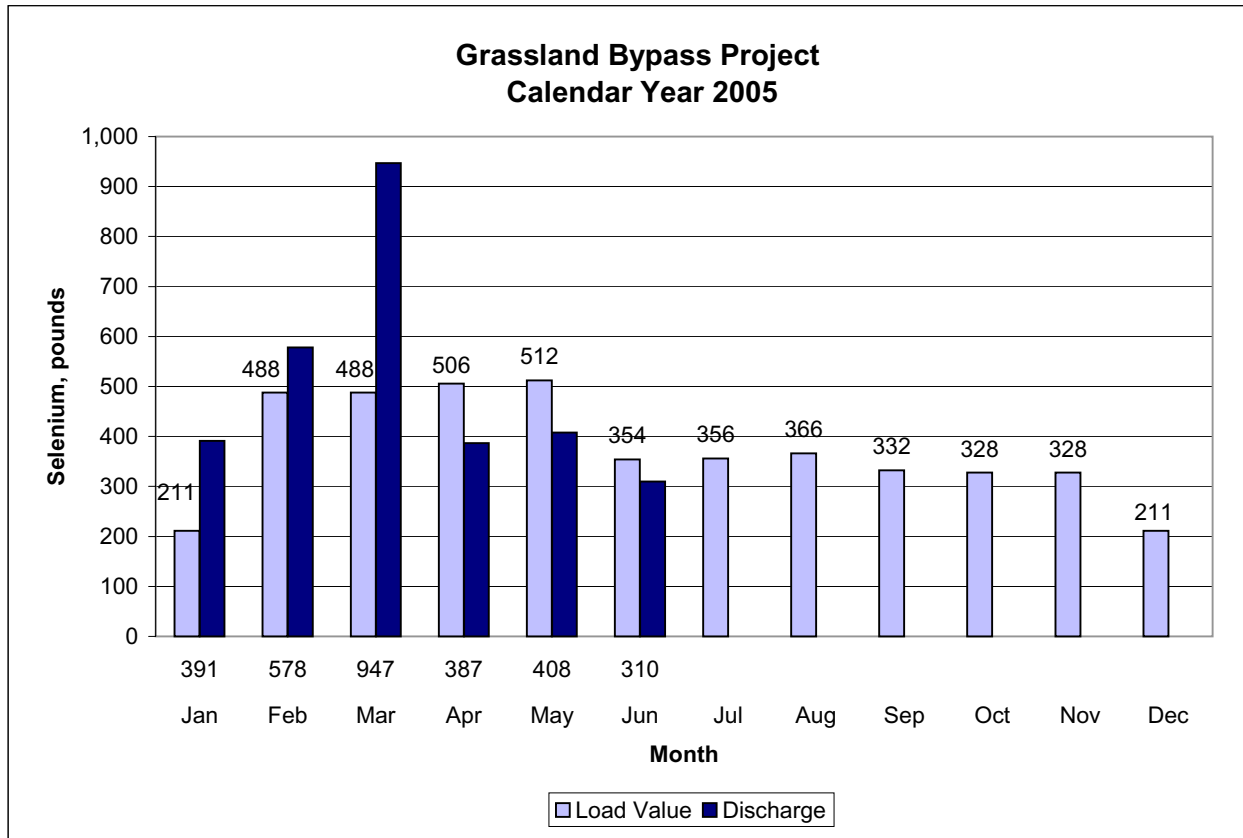
To improve the accuracy of flow measurements, Reclamation and the San Luis & Delta-Mendota Water Authority, with technical assistance from the USGS, are measuring flow at the San Luis Drain Outlet. The Outlet is located two miles from Station B. Discharge will be measured as stage over a sharp-crested weir, identical to Station A. This is a simpler and more accurate method that will not be altered by sediment accumulation.

This change is subject to approval by the California Regional Water Quality Board and modification of the Waste Discharge Requirement Order and Monitoring and Reporting Program. It is anticipated that flow will be measured solely at the Outlet works for determination of GBP flow discharge.

Unofficial flow data for the Outlet works are presented in Table 2b for comparison and are not used to determine compliance with the Waste Discharge Requirement Order.

*Selenium (total) concentrations from Site B (San Luis Drain)

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



**Table 3. Continuous water monitoring at Station D
(Mud Slough North downstream of drainage discharges), June 2005.**

See Table 27 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Temperature	Specific Conductance
DATA SOURCE	usgs	usgs	usgs
UNITS	cfs	°C	µS/cm
Jun-01-2005	88	24.6	3,620
Jun-02-2005	90	22.6	3,620
Jun-03-2005	89	23.0	3,360
Jun-04-2005	84	24.1	3,450
Jun-05-2005	89	23.2	2,590
Jun-06-2005	86	22.0	2,580
Jun-07-2005	77	21.4	2,690
Jun-08-2005	74	21.3	2,980
Jun-09-2005	81	22.1	3,000
Jun-10-2005	77	23.3	2,880
Jun-11-2005	78	24.1	2,610
Jun-12-2005	73	23.5	2,810
Jun-13-2005	70	23.7	2,820
Jun-14-2005	64	25.3	2,960
Jun-15-2005	63	25.3	3,140
Jun-16-2005	69	23.7	2,860
Jun-17-2005	70	22.7	3,010
Jun-18-2005	66	22.8	3,280
Jun-19-2005	76	23.2	3,040
Jun-20-2005	87	23.6	2,980
Jun-21-2005	93	24.0	2,910
Jun-22-2005	101	24.1	2,820
Jun-23-2005	114	24.8	2,610
Jun-24-2005	100	24.9	2,630
Jun-25-2005	94	24.7	2,670
Jun-26-2005	95	24.4	2,940
Jun-27-2005	98	24.4	2,870
Jun-28-2005	105	24.7	2,700
Jun-29-2005	94	25.7	2,820
Jun-30-2005	91	26.9	2,700
.	.	.	.
Mean	85	23.8	2,930

Table 4. Continuous water monitoring at Station F (Salt Slough at Highway 165), June 2005.

See Table 27 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Temperature	Specific Conductance
DATA SOURCE	usgs	usgs	usgs
UNITS	cfs	°C	µS/cm
Jun-01-2005	181	24.4	945
Jun-02-2005	168	22.6	870
Jun-03-2005	157	22.8	1,010
Jun-04-2005	151	23.4	965
Jun-05-2005	148	22.4	970
Jun-06-2005	149	20.7	882
Jun-07-2005	160	20.4	876
Jun-08-2005	214	20.5	874
Jun-09-2005	229	21.3	856
Jun-10-2005	217	22.8	889
Jun-11-2005	207	23.4	865
Jun-12-2005	212	23.0	854
Jun-13-2005	220	23.3	857
Jun-14-2005	236	24.7	785
Jun-15-2005	242	24.6	777
Jun-16-2005	230	22.7	838
Jun-17-2005	209	21.3	880
Jun-18-2005	179	21.6	1,000
Jun-19-2005	182	22.3	997
Jun-20-2005	185	23.0	954
Jun-21-2005	181	23.6	935
Jun-22-2005	172	23.6	996
Jun-23-2005	160	24.4	1,070
Jun-24-2005	152	23.8	1,070
Jun-25-2005	168	23.5	1,130
Jun-26-2005	201	23.3	940
Jun-27-2005	230	23.4	866
Jun-28-2005	241	23.8	903
Jun-29-2005	241	25.0	922
Jun-30-2005	233	26.5	871
.	.	.	.
Mean	195	23.1	920

Table 5. Continuous water monitoring at Station N (San Joaquin River at Crow's Landing), June 2005.

See Table 27 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
Jun-01-2005	9,910	20.7	134	<0.4
Jun-02-2005	10,200	20.0	134	<0.4
Jun-03-2005	10,200	20.1	133	<0.4
Jun-04-2005	10,100	20.9	137	<0.4
Jun-05-2005	9,680	21.2	NA	NA
Jun-06-2005	8,940	20.2	NA	NA
Jun-07-2005	8,060	19.4	NA	NA
Jun-08-2005	7,240	19.2	NA	NA
Jun-09-2005	6,530	19.5	NA	NA
Jun-10-2005	5,990	20.4	NA	NA
Jun-11-2005	5,450	21.5	NA	NA
Jun-12-2005	5,140	21.3	NA	NA
Jun-13-2005	4,900	21.0	NA	NA
Jun-14-2005	4,590	21.6	NA	NA
Jun-15-2005	3,930	22.1	NA	NA
Jun-16-2005	3,360	21.2	NA	NA
Jun-17-2005	2,970	19.6	NA	NA
Jun-18-2005	2,710	19.1	NA	NA
Jun-19-2005	2,550	19.5	NA	NA
Jun-20-2005	2,550	19.9	NA	NA
Jun-21-2005	2,520	20.4	NA	NA
Jun-22-2005	2,830	20.1	NA	NA
Jun-23-2005	2,920	20.2	NA	NA
Jun-24-2005	2,640	20.7	514	1.2
Jun-25-2005	2,440	20.9	580	1.3
Jun-26-2005	2,350	20.9	620	1.3
Jun-27-2005	2,260	21.2	667	1.3
Jun-28-2005	2,580	22.1	522	1.1
Jun-29-2005	2,720	22.8	383	1.0
Jun-30-2005	2,620	23.7	434	1.0
.
Mean	5,030	20.7	#DIV/0!	#DIV/0!

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

See Table 27 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	.	.	.
Apr-06-2005	34	.	.	5,580	130	.	.	.
Apr-13-2005	28	.	.	5,830	65	.	.	.
Apr-20-2005	32	.	.	5,170	87	.	.	.
Apr-27-2005	38	.	.	4,710	200	.	.	.
May-04-2005	37	.	.	4,830	280	.	.	.
May-11-2005	37	.	.	5,210	180	.	.	.
May-18-2005	38	.	.	4,650	150	.	.	.
May-25-2005	42	.	.	4,210	110	.	.	.
Jun-01-2005	48	.	.	4,540	180	.	.	.
Jun-08-2005	42	.	.	4,200	100	.	.	.
Jun-15-2005	36	.	.	4,580	190	.	.	.
Jun-22-2005	47	.	.	4,280	110	.	.	.
Jun-29-2005	49	.	.	4,650	120	.	.	.

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

See Table 27 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
Apr-05-2005	35	.	.	5,680	.	78.1	.	P
Apr-12-2005	29	.	.	5,810	.	76.6	.	9.3
Apr-19-2005	34	.	.	5,590	.	60.8	.	10.0
Apr-26-2005	35	.	.	4,670	.	53.9	.	7.1
May-03-2005	40	.	.	4,530	.	53.4	.	8.1
May-10-2005	44	.	.	5,220	.	70.6	.	8.8
May-17-2005	39	.	.	5,100	.	64.0	.	8.6
May-24-2005	46	.	.	4,520	.	48.6	.	8.4
May-31-2005	48	.	.	4,390	.	48.5	.	8.9
Jun-07-2005	42	.	.	4,220	.	35.2	.	P
Jun-14-2005	47	.	.	4,410	.	41.2	.	8.2
Jun-21-2005	46	.	.	4,640	.	40.6	.	9.8
Jun-28-2005	49	.	.	4,160	.	39.6	.	9.0

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

See Table 27 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
Apr-07-2005	36	18.1	8.4	5,720	70	70.6	9.7
Apr-14-2005	31	15.2	8.3	5,770	41	72.6	P
Apr-21-2005	32	18.2	8.3	5,610	40	55.8	10.0
Apr-28-2005	38	18.6	7.7	4,730	54	57.4	P
May-05-2005	38	20.8	7.5	4,620	62	58.2	7.6
May-12-2005	39	20.1	7.9	5,350	58	71.8	9.7
May-19-2005	39	21.7	8.0	5,410	54	70.2	P
May-26-2005	42	25.1	8.2	4,080	34	40.8	P
Jun-02-2005	52	21.4	8.4	4,670	76	49.5	9.5
Jun-09-2005	46	20.5	7.9	3,970	66	33.9	P
Jun-16-2005	35	24.1	8.1	4,310	44	40.0	8.3
Jun-23-2005	47	23.9	NA	4,430	64	43.2	9.3
Jun-30-2005	50	25.7	8.5	3,930	58	39.8	P

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

See Table 27 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
Apr-07-2005	67	17.5	8.3	1,410	.	0.9	2.3
Apr-14-2005	49	14.0	8.5	2,500	.	0.9	P
Apr-21-2005	38	17.6	8.2	2,540	.	0.7	2.2
Apr-28-2005	40	18.2	8.0	1,490	.	0.8	P
May-05-2005	37	20.2	8.1	1,070	.	1.0	1.3
May-12-2005	28	19.2	8.5	1,690	.	0.7	1.6
May-19-2005	27	21.6	8.1	2,590	.	0.6	P
May-26-2005	91	24.2	7.9	981	.	0.6	P
Jun-02-2005	38	21.0	8.1	1,340	.	0.6	1.6
Jun-09-2005	35	20.2	8.0	1,080	.	0.5	P
Jun-16-2005	34	23.0	8.0	1,230	.	0.8	1.3
Jun-23-2005	67	23.5	NA	949	.	1.0	1.2
Jun-30-2005	41	26.5	8.2	1,110	.	1.0	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 27 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
Apr-07-2005	103	17.7	8.3	3,550	20.2	4.8
Apr-14-2005	80	14.3	8.4	3,720	23.2	P
Apr-21-2005	70	17.6	8.3	4,180	26.8	5.2
Apr-28-2005	78	18.3	8.1	3,000	24.7	P
May-05-2005	75	20.5	8.1	3,280	29.8	4.4
May-12-2005	67	19.2	8.2	3,930	36.6	6.2
May-19-2005	66	21.5	8.2	4,240	35.4	P
May-26-2005	133	24.7	8.2	2,880	20.6	P
Jun-02-2005	90	21.8	8.3	2,420	19.4	4.8
Jun-09-2005	81	20.7	8.1	2,790	15.8	P
Jun-16-2005	69	23.4	8.1	3,000	20.4	5.0
Jun-23-2005	114	23.5	NA	2,700	19.8	4.9
Jun-30-2005	91	25.9	8.4	2,740	23.0	P

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

See Table 27 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
Apr-05-2005	.	8.3	4,200	37	25.9	5.0
Apr-12-2005	.	8.8	4,990	47	14.7	5.0
Apr-20-2005	.	8.5	3,980	32	19.7	5.4
Apr-26-2005	.	8.6	3,890	34	22.8	5.4
May-02-2005	.	8.5	3,710	28	29.0	5.6
May-11-2005	.	8.4	4,080	43	35.4	6.0
May-19-2005	.	8.5	4,140	25	NA	NA
May-24-2005	.	8.3	2,870	36	20.9	4.1
Jun-02-2005	.	8.8	3,120	17	24.0	5.2
Jun-07-2005	.	9.1	2,540	22	14.2	4.3
Jun-15-2005	.	8.6	3,650	47	21.8	6.2
Jun-21-2005	.	8.8	3,220	59	16.8	5.0
Jun-29-2005	.	8.6	3,240	33	22.0	4.9

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

See Table 27 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
Apr-07-2005	241	17.5	7.6	200	1.1	P
Apr-14-2005	243	14.7	7.8	1,580	0.9	P
Apr-21-2005	223	16.8	7.9	1,430	0.5	0.8
Apr-28-2005	217	17.6	7.8	1,220	0.7	P
May-05-2005	189	19.6	7.5	1,400	0.4	0.7
May-12-2005	220	18.8	7.5	1,400	0.4	P
May-19-2005	139	20.0	7.4	1,610	0.6	P
May-26-2005	210	24.5	7.1	1,180	0.4	P
Jun-02-2005	168	21.6	7.5	769	<0.4	0.4
Jun-09-2005	229	19.9	7.4	808	<0.4	P
Jun-16-2005	230	22.2	7.5	807	0.5	0.5
Jun-23-2005	160	22.6	NA	1,070	0.7	0.7
Jun-30-2005	233	24.5	7.5	886	0.7	P

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

See Table 27 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
Apr-06-2005	0	.	.	1,190	1.8	P
Apr-13-2005	15	.	.	1,080	1.9	1.2
Apr-20-2005	15	.	.	135	0.4	0.2
Apr-27-2005	15	.	.	217	<0.4	0.2
May-04-2005	15	.	.	240	<0.4	0.2
May-11-2005	25	.	.	272	<0.4	0.3
May-18-2005	30	.	.	153	<0.4	0.2
May-25-2005	30	.	.	140	0.6	0.1
Jun-01-2005	30	.	.	96	0.5	0.1
Jun-08-2005	30	.	.	103	0.6	P
Jun-15-2005	25	.	.	178	0.7	0.2
Jun-22-2005	15	.	.	133	0.9	0.2
Jun-29-2005	10	.	.	119	0.5	0.2

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

See Table 27 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
Apr-06-2005	0	.	.	2,760	1.9	P
Apr-13-2005	15	.	.	199	0.5	0.2
Apr-20-2005	15	.	.	171	<0.4	0.3
Apr-27-2005	25	.	.	168	0.5	0.1
May-04-2005	15	.	.	200	<0.4	0.2
May-11-2005	25	.	.	257	0.4	0.2
May-18-2005	25	.	.	173	<0.4	0.2
May-25-2005	25	.	.	121	0.5	0.1
Jun-01-2005	40	.	.	86	0.4	0.1
Jun-08-2005	40	.	.	104	0.7	P
Jun-15-2005	20	.	.	166	0.8	0.2
Jun-22-2005	20	.	.	118	0.6	0.1
Jun-29-2005	20	.	.	208	0.7	0.2

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

See Table 27 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
Apr-06-2005	50	.	.	867	3.0	P
Apr-13-2005	50	.	.	440	1.6	0.3
Apr-20-2005	50	.	.	322	0.9	0.4
Apr-27-2005	50	.	.	610	0.9	0.5
May-04-2005	50	.	.	456	0.7	0.4
May-11-2005	50	.	.	367	0.8	0.3
May-18-2005	50	.	.	516	1.4	<0.1
May-25-2005	50	.	.	292	0.7	0.3
Jun-01-2005	100	.	.	452	0.9	0.6
Jun-08-2005	80	.	.	384	1.1	P
Jun-15-2005	55	.	.	578	1.6	0.7
Jun-22-2005	55	.	.	575	1.5	0.8
Jun-29-2005	55	.	.	668	1.5	0.8

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

See Table 27 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
Apr-06-2005	51	.	.	2,450	2.1	P
Apr-13-2005	45	.	.	1,750	1.1	1.9
Apr-20-2005	57	.	.	1,480	0.7	1.9
Apr-27-2005	51	.	.	717	0.6	0.7
May-04-2005	61	.	.	954	0.8	1.1
May-11-2005	29	.	.	970	0.4	1.2
May-18-2005	74	.	.	569	0.6	0.7
May-25-2005	64	.	.	523	0.9	0.7
Jun-01-2005	26	.	.	666	0.8	1.0
Jun-08-2005	51	.	.	554	1.0	P
Jun-15-2005	45	.	.	841	1.1	1.7
Jun-22-2005	24	.	.	1,110	1.6	2.2
Jun-29-2005	45	.	.	857	1.2	1.6

Table 16. Weekly water quality monitoring at Central California Irrigation District Main Canal at Russell Avenue (MER510).

See Table 27 for explanation of footnotes and agency abbreviations.

PARAMETER	.	.	.	Specific Conductance	Selenium (total)	Boron
DATA SOURCE	.	.	.	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	.	.	.	µS/cm	µg/L	mg/L
Apr-06-2005	.	.	.	702	2.7	P
Apr-13-2005	.	.	.	91	<0.4	<0.1
Apr-20-2005	.	.	.	64	<0.4	<0.1
Apr-27-2005	.	.	.	126	<0.4	<0.1
May-04-2005	.	.	.	183	<0.4	0.1
May-11-2005	.	.	.	248	0.5	0.2
May-18-2005	.	.	.	162	<0.4	0.2
May-25-2005	.	.	.	121	0.6	0.1
Jun-01-2005	.	.	.	93	0.5	0.1
Jun-08-2005	.	.	.	127	1.1	P
Jun-15-2005	.	.	.	184	0.8	0.2
Jun-22-2005	.	.	.	198	1.1	0.2
Jun-29-2005	.	.	.	154	0.7	0.2

Table 17. Weekly water quality monitoring at Station G (San Joaquin River at Fremont Ford).

See Table 27 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
Apr-07-2005	988	18.0	7.0	1,170	0.6	0.6
Apr-14-2005	782	15.6	7.2	1,160	0.4	P
Apr-21-2005	475	17.8	7.3	1,580	0.6	0.7
Apr-28-2005	442	18.4	7.0	1,500	0.5	P
May-05-2005	445	20.6	7.2	1,350	<0.4	0.5
May-12-2005	899	19.9	7.2	551	<0.4	0.3
May-19-2005	1,620	20.9	7.0	171	0.5	P
May-26-2005	3,580	NA	NA	NA	NA	NA
Jun-02-2005	4,120	NA	NA	NA	NA	NA
Jun-09-2005	3,110	NA	NA	NA	NA	NA
Jun-16-2005	898	24.0	7.0	539	<0.4	0.3
Jun-23-2005	559	23.9	NA	864	0.5	0.4
Jun-30-2005	986	25.9	7.3	394	<0.4	P

Table 18. Weekly water quality monitoring at Station H (San Joaquin River at Hills Ferry).

(Collected data intended for use with biological monitoring.)

See Table 27 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
Apr-05-2005	.	.	.	NA	0.0	<0.4
Apr-19-2005	.	.	.	NA	3.3	1.5
Apr-26-2005	.	.	.	NA	3.2	1.3
May-03-2005	.	.	.	NA	4.5	1.4
May-10-2005	.	.	.	NA	3.8	0.9
May-17-2005	.	.	.	NA	2.5	0.6
May-24-2005	.	.	.	NA	0.8	0.2
Jun-03-2005	.	.	.	NA	0.8	0.0
Jun-07-2005	.	.	.	NA	<0.4	0.0
Jun-14-2005	.	.	.	NA	<0.4	0.1
Jun-21-2005	.	.	.	NA	2.9	1.2

Table 19. Weekly water quality monitoring at Station N (San Joaquin River at Crow's Landing).

See Table 27 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
Apr-07-2005	4,600	14.8	7.7	531	1.0	0.4
Apr-14-2005	3610	13.7	7.7	553	0.9	P
Apr-21-2005	3,020	15.0	7.9	561	1.0	0.4
Apr-28-2005	2,520	15.7	7.5	579	1.2	P
May-05-2005	2,340	17.2	7.6	601	1.5	0.4
May-12-2005	3,150	16.8	7.5	378	1.3	0.3
May-19-2005	3,770	17.7	7.4	205	0.6	P
May-26-2005	6,320	20.6	7.8	100	<0.4	P
Jun-02-2005	10,200	19.7	7.5	133	<0.4	0.1
Jun-09-2005	6,530	19.1	7.0	182	<0.4	P
Jun-16-2005	3,360	21.2	7.3	414	0.9	0.4
Jun-23-2005	2,920	20.1	NA	403	1.1	0.4
Jun-30-2005	2,620	23.2	7.4	439	1.0	P

Table 20. Summary of fathead minnow (*Pimephales promelas*) larvae survival in 7-day tests using water samples collected from July 2004 to June 2005. Each value is the mean of 4 replicates with 10 fish in each replicate.

See Table 27 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	%	%	%	%	%	%
Jul-2004	100	90	93	88	98	98
Aug-2004	98	98	100	95	85	100
Sep-2004	98	93	95	100	93	95
Oct-2004	100	95	98	95	98	98
Nov-2004	95	98	58*	88	98	98
Dec-2004	100	68*	75*	98	98	100
Jan-2005	98	85	80	100	100	98
Feb-2005	95	88	98	80	90	98
Mar-2005	88	73	93	83	85	73†
Apr-2005	95	100	95	93	100	90
May-2005	100	98	93	100	83	98
Jun-2005	100	93	98	95	90	95

Table 21. Summary of fathead minnow (*Pimephales promelas*) larvae growth in 7-day tests using water samples collected from July 2004 to June 2005. Each value is the mean of 4 replicates with 10 fish in each replicate.

See Table 27 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
Jul-2004	0.55	0.50	0.51	0.54	0.51	0.48
Aug-2004	0.60	0.62	0.62	0.64	0.55	0.59
Sep-2004	0.71	0.60	0.75	0.74	0.62	0.51
Oct-2004	0.69	0.67	0.71	0.71	0.66	0.58
Nov-2004	0.58	0.62	0.41*	0.62	0.62	0.71
Dec-2004	0.58	0.47	0.53	0.66	0.54	0.48
Jan-2005	0.62	0.57	0.51	0.61	0.54	0.46
Feb-2005	0.76	0.62	0.69	0.63	0.62	0.54
Mar-2005	0.41	0.38	0.49	0.44	0.46	0.35
Apr-2005	0.42	0.40	0.44	0.42	0.38	0.29
May-2005	0.40	0.46	0.39	0.43	0.29	0.42
Jun-2005	0.51	0.50	0.50	0.50	0.47	0.36

Table 22. Summary of *Daphnia magna* survival in 7-day tests using water samples collected from July 2004 to June 2005. Each value is the mean of 10 replicates with 1 animal in each replicate.

See Table 27 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	%	%	%	%	%	%
Jul-2004	100	100	80	90	90	90
Aug-2004	100	88	88	100	90	100
Sep-2004	80	100	90	100	100	90
Oct-2004	100	100	80	100	100	100
Nov-2004	80	70	90	80	100	80
Dec-2004	100	100	90	90	80	100
Jan-2005	100	90	80	100	100	90
Feb-2005	80	100	100	90	100	30†
Mar-2005	80	100	90	100	100	90
Apr-2005	90	90	100	90	90	100
May-2005	90	90	100	100	90	90
Jun-2005	90	90	80	90	80	100

Table 23. Summary of *Daphnia magna* reproduction in 7-day tests using water samples collected from July 2004 to June 2005. Each value is the mean of 10 replicates with 1 animal in each replicate.

See Table 27 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
Jul-2004	51.3	32.4	48.5	36.2	38.8	34.9
Aug-2004	41.9	41.8	46.1	37.4	32.0	33.9
Sep-2004	49.8	48.0	40.4	38.7	41.8	44.3
Oct-2004	48.1	39.8	29.2*	36.6	47.0	32.1
Nov-2004	37.0	28.3	44.6	41.8	35.9	27.0
Dec-2004	30.8	30.8	32.8	34.4	26.6	31.1
Jan-2005	41.7	38.8	40.2	45.9	47.6	34.7
Feb-2005	15.2	13.6	17.3	8.5	12.2	4.0
Mar-2005	37.4	38.9	42.4	38.8	31.6	44.0
Apr-2005	26.4	35.9	42.3	37.1	30.4	27.0
May-2005	39.8	38.6	45.5	36.1	34.1	40.9
Jun-2005	41.8	35.1	36.8	42.5	30.7	31.9

Table 24. Summary of *Selenastrum capricornutum* growth in 4-day tests using water samples collected from July 2004 to June 2005. Each value is the mean of 4 replicates.

See Table 27 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
Jul-2004	3.6*	13.1	16.3	17.5	12.5	10.1
Aug-2004	14.8	17.7	14.2	16.9	12.2	17.6
Sep-2004	12.4*	13.4*	15.6	16.3	16.2	14.6
Oct-2004	14.5	22.1	17.7	5.9*	16.6	16.8
Nov-2004	18.5	21.1	20.4	22.0	16.5	17.6
Dec-2004	0.9*	10.4	12.2	23.4	3.5	15.6
Jan-2005	1.3*	12.7	10.6*	18.0	13.7	16.2
Feb-2005	13.7	17.7	19.5	10.7*	13.1	22.4
Mar-2005	14.9	20.1	19.7	20.7	11.5	16.0
Apr-2005	17.4	25.6	21.1	19.6	19.2	24.5
May-2005	24.0	23.5	24.5	19.7	16.1	30.4
Jun-2005	21.4	17.8	21.2	14.6	16.3	20.6

Table 25. Summary of selenium concentrations in grab water samples collected at study stations for use in laboratory toxicity tests, April 2005 to June 2005.

See Table 27 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-11-2005	77	1.1	16	1.0	0.5
Apr-13-2005	69	0.8	25	0.8	0.5
Apr-15-2005	75	1.1	25	0.7	0.5
May-09-2005	69	0.5	31	<0.4	<0.4
May-11-2005	65	0.5	36	<0.4	<0.4
May-13-2005	73	0.5	41	<0.4	<0.4
Jun-06-2005	38	0.6	12	<0.4	<0.4
Jun-08-2005	31	0.5	14	<0.4	0.4
Jun-10-2005	37	0.5	21	0.5	<0.4

Table 26. Summary of total suspended solids concentrations in grab water samples collected at study stations for use in laboratory toxicity tests, April 2005 to June 2005.

See Table 27 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
Apr-11-2005	61	94	91	44	11
Apr-13-2005	77	199	97	100	10
Apr-15-2005	40	71	59	69	1
May-09-2005	58	135	117	158	125
May-11-2005	76	96	100	100	90
May-13-2005	104	646	141	153	17
Jun-06-2005	53	55	43	108	17
Jun-08-2005	43	53	55	115	48
Jun-10-2005	38	87	71	125	24

Table 27. 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
D	Sample was dechlorinated