

# GRASSLAND BYPASS PROJECT

## MONTHLY DATA REPORT

March 2005

August 1, 2005

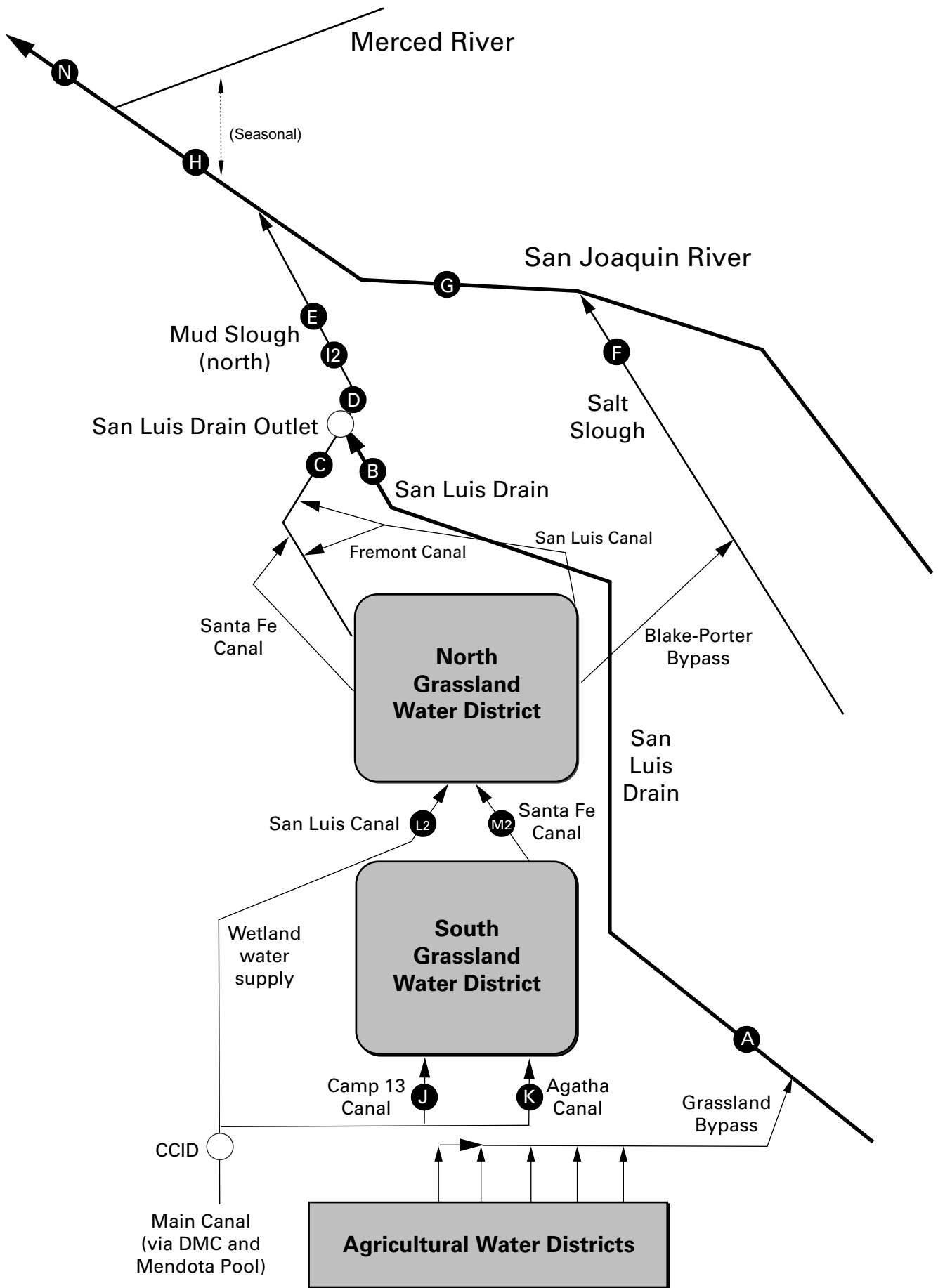
### Preliminary Results

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





**GRASSLAND BYPASS PROJECT**  
**MONTHLY DATA REPORT**

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**Table 1. Continuous water monitoring at Station A (inflow to San Luis Drain), March 2005.**

See Table 27 for explanation of footnotes and agency abbreviations.

<b>PARAMETER</b>	<b>Flow</b>	<b>Specific Conductance</b>
<b>DATA SOURCE</b>	<b>SLDMWA</b>	<b>SLDMWA</b>
<b>UNITS</b>	<b>cfs</b>	<b>µS/cm</b>
Mar-01-2005	74	5,080
Mar-02-2005	75	5,040
Mar-03-2005	76	5,130
Mar-04-2005	80	4,990
Mar-05-2005	77	4,940
Mar-06-2005	70	5,150
Mar-07-2005	65	5,390
Mar-08-2005	61	5,520
Mar-09-2005	59	5,510
Mar-10-2005	59	5,590
Mar-11-2005	64	5,730
Mar-12-2005	63	5,850
Mar-13-2005	60	5,720
Mar-14-2005	59	5,780
Mar-15-2005	59	5,580
Mar-16-2005	59	5,510
Mar-17-2005	58	5,390
Mar-18-2005	58	5,300
Mar-19-2005	58	5,250
Mar-20-2005	56	5,190
Mar-21-2005	58	5,080
Mar-22-2005	63	4,900
Mar-23-2005	67	4,940
Mar-24-2005	62	5,160
Mar-25-2005	57	5,090
Mar-26-2005	51	5,130
Mar-27-2005	49	5,300
Mar-28-2005	49	5,560
Mar-29-2005	44	5,620
Mar-30-2005	45	5,640
Mar-31-2005	43	5,710
Mean	61	5,350

Table 2a. Continuous water monitoring at Station B (discharge from San Luis Drain), March 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
Mar-01-2005	77	16.5	8.8	4,930	78.6	32.6
Mar-02-2005	75	16.6	9.0	5,040	80.9	32.7
Mar-03-2005	76	16.6	9.3	5,140	81.8	33.5
Mar-04-2005	79	16.3	8.6	5,060	82.4	35.1
Mar-05-2005	80	16.0	8.7	5,180	85.4	36.8
Mar-06-2005	77	16.5	8.5	5,130	84.6	35.1
Mar-07-2005	72	17.0	7.8	4,920	80.4	31.2
Mar-08-2005	67	18.2	9.0	5,300	88.7	32.1
Mar-09-2005	63	19.0	9.1	5,220	88.0	29.9
Mar-10-2005	62	19.8	9.8	5,370	89.7	30.0
Mar-11-2005	62	20.4	9.7	5,520	94.7	31.7
Mar-12-2005	66	21.0	9.8	5,600	94.8	33.7
Mar-13-2005	64	20.1	9.5	5,690	92.2	31.8
Mar-14-2005	63	18.7	9.8	5,820	98.8	33.6
Mar-15-2005	61	17.9	10.0	5,910	102.0	33.6
Mar-16-2005	61	17.9	9.7	5,820	109.0	35.9
Mar-17-2005	59	17.3	10.0	5,690	110.0	35.0
Mar-18-2005	59	16.8	9.8	5,570	102.0	32.5
Mar-19-2005	59	16.3	9.6	5,460	100.0	31.8
Mar-20-2005	60	15.8	9.2	5,390	97.1	31.4
Mar-21-2005	58	15.8	9.1	5,230	98.2	30.7
Mar-22-2005	62	15.5	9.1	5,180	95.5	31.9
Mar-23-2005	66	15.2	9.0	5,110	89.8	32.0
Mar-24-2005	68	15.6	8.8	4,940	81.4	29.9
Mar-25-2005	63	16.3	7.3	4,830	76.8	26.1
Mar-26-2005	59	16.9	7.8	5,120	78.2	24.9
Mar-27-2005	53	17.3	8.4	5,290	78.0	22.3
Mar-28-2005	52	17.1	8.1	5,220	78.4	22.0
Mar-29-2005	51	16.6	8.5	5,230	78.3	21.5
Mar-30-2005	50	15.6	8.6	5,350	84.1	22.7
Mar-31-2005	47	15.8	8.6	5,540	89.8	22.8
Mean	64	17.2	9.0	5,320	89.3	30.5
<b>Total Acre-feet</b>	<b>3,910</b>					
<b>Total (lbs)</b>						<b>947</b>

<b>Load Limitation for March 2005 (lbs)</b>	<b>488</b>
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Table 2b. Continuous water monitoring at San Luis Drain Outlet, March 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
Mar-01-2005	81	78.6	34.3
Mar-02-2005	78	80.9	34.0
Mar-03-2005	79	81.8	34.9
Mar-04-2005	81	82.4	36.0
Mar-05-2005	84	85.4	38.7
Mar-06-2005	81	84.6	37.0
Mar-07-2005	75	80.4	32.5
Mar-08-2005	70	88.7	33.5
Mar-09-2005	65	88.0	30.9
Mar-10-2005	63	89.7	30.5
Mar-11-2005	63	94.7	32.2
Mar-12-2005	67	94.8	34.3
Mar-13-2005	66	92.2	32.8
Mar-14-2005	63	98.8	33.6
Mar-15-2005	63	102.0	34.7
Mar-16-2005	62	109.0	36.4
Mar-17-2005	62	110.0	36.8
Mar-18-2005	61	102.0	33.6
Mar-19-2005	62	100.0	33.4
Mar-20-2005	62	97.1	32.5
Mar-21-2005	61	98.2	32.3
Mar-22-2005	67	95.5	34.5
Mar-23-2005	69	89.8	33.4
Mar-24-2005	71	81.4	31.2
Mar-25-2005	66	76.8	27.3
Mar-26-2005	61	78.2	25.7
Mar-27-2005	55	78.0	23.1
Mar-28-2005	52	78.4	22.0
Mar-29-2005	53	78.3	22.4
Mar-30-2005	47	84.1	21.3
Mar-31-2005	48	89.8	23.2
Mean	66	89.3	31.6
Total Acre-feet	4,040		
Total (lbs)			979

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.

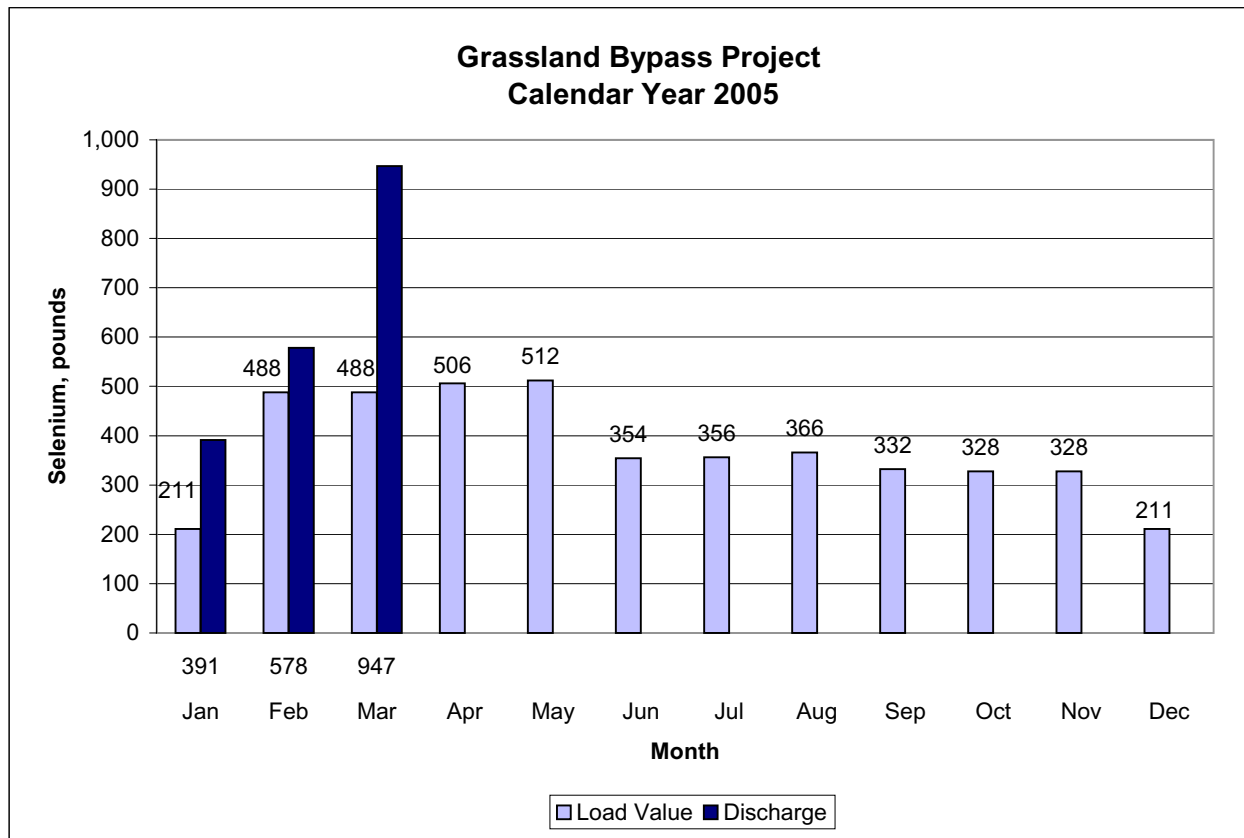
To improve the accuracy of flow measurements, Reclamation and the San Luis & Delta-Mendota Water Authority, with technical assistance from the USGS, are measuring flow at the San Luis Drain Outlet. The Outlet is located two miles from Station B. Discharge will be measured as stage over a sharp-crested 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), March 2005.**

See Table 27 for explanation of footnotes and agency abbreviations.

<b>PARAMETER</b>	<b>Flow</b>	<b>Temperature</b>	<b>Specific Conductance</b>
<b>DATA SOURCE</b>	<b>usgs</b>	<b>usgs</b>	<b>usgs</b>
<b>UNITS</b>	<b>cfs</b>	<b>°C</b>	<b>µS/cm</b>
Mar-01-2005	447	15.5	2,350
Mar-02-2005	409	16.1	2,570
Mar-03-2005	391	16.0	2,760
Mar-04-2005	329	15.9	3,070
Mar-05-2005	278	15.4	3,200
Mar-06-2005	272	16.7	3,120
Mar-07-2005	370	17.0	2,560
Mar-08-2005	386	17.5	2,540
Mar-09-2005	338	18.8	2,720
Mar-10-2005	311	19.9	2,890
Mar-11-2005	242	20.5	3,250
Mar-12-2005	229	21.1	3,420
Mar-13-2005	193	20.0	3,560
Mar-14-2005	181	18.2	3,580
Mar-15-2005	185	17.5	3,650
Mar-16-2005	136	17.7	3,890
Mar-17-2005	135	17.0	3,840
Mar-18-2005	142	16.5	3,620
Mar-19-2005	136	16.0	3,730
Mar-20-2005	143	15.6	3,600
Mar-21-2005	141	15.6	3,660
Mar-22-2005	179	14.9	3,530
Mar-23-2005	284	14.4	3,030
Mar-24-2005	312	15.3	3,060
Mar-25-2005	363	15.9	2,810
Mar-26-2005	438	16.2	2,490
Mar-27-2005	439	16.5	2,460
Mar-28-2005	422	16.2	2,400
Mar-29-2005	355	15.3	2,560
Mar-30-2005	199	15.2	3,050
Mar-31-2005	140	16.1	3,410
Mean	275	16.8	3,110



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

See Table 27 for explanation of footnotes and agency abbreviations.

<b>PARAMETER</b>	<b>Flow</b>	<b>Temperature</b>	<b>Specific Conductance</b>
<b>DATA SOURCE</b>	<b>usgs</b>	<b>usgs</b>	<b>usgs</b>
<b>UNITS</b>	<b>cfs</b>	<b>°C</b>	<b>µS/cm</b>
Mar-01-2005	439	15.6	1,160
Mar-02-2005	445	16.0	1,160
Mar-03-2005	435	15.8	1,240
Mar-04-2005	419	15.6	1,310
Mar-05-2005	407	15.3	1,360
Mar-06-2005	405	15.8	1,360
Mar-07-2005	406	16.4	1,380
Mar-08-2005	404	17.4	1,410
Mar-09-2005	396	18.2	1,470
Mar-10-2005	389	19.0	1,530
Mar-11-2005	376	19.5	1,580
Mar-12-2005	361	20.0	1,600
Mar-13-2005	349	19.2	1,640
Mar-14-2005	334	17.7	1,670
Mar-15-2005	321	17.0	1,710
Mar-16-2005	314	16.9	1,750
Mar-17-2005	316	16.4	1,740
Mar-18-2005	325	16.2	1,720
Mar-19-2005	334	15.8	1,670
Mar-20-2005	337	15.3	1,610
Mar-21-2005	343	15.3	1,580
Mar-22-2005	362	15.2	1,570
Mar-23-2005	396	14.8	1,550
Mar-24-2005	468	15.0	1,520
Mar-25-2005	561	15.5	1,550
Mar-26-2005	591	16.0	1,600
Mar-27-2005	557	16.3	1,660
Mar-28-2005	503	16.5	1,730
Mar-29-2005	456	15.9	1,760
Mar-30-2005	428	15.2	1,800
Mar-31-2005	400	15.7	1,830
Mean	406	16.5	1,560

Table 5. Continuous water monitoring at Station N (San Joaquin River at Crow's Landing), March 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
Mar-01-2005	2,620	15.5	1,250	3.1
Mar-02-2005	2,710	15.8	1,090	2.8
Mar-03-2005	2,710	15.7	1,030	2.8
Mar-04-2005	2,670	15.8	NA	NA
Mar-05-2005	2,580	15.2	NA	NA
Mar-06-2005	2,410	15.9	NA	NA
Mar-07-2005	2,290	16.4	NA	NA
Mar-08-2005	2,180	17.1	NA	NA
Mar-09-2005	2,100	18.0	NA	NA
Mar-10-2005	2,000	18.7	NA	NA
Mar-11-2005	1,920	19.3	NA	NA
Mar-12-2005	1,830	19.9	NA	NA
Mar-13-2005	1,750	20.1	NA	NA
Mar-14-2005	1,670	19.0	NA	NA
Mar-15-2005	1,590	17.8	NA	NA
Mar-16-2005	1,540	17.5	NA	NA
Mar-17-2005	1,480	17.0	NA	NA
Mar-18-2005	1,530	16.6	1,740	5.0
Mar-19-2005	1,540	16.4	1,640	4.7
Mar-20-2005	1,490	15.9	1,690	4.9
Mar-21-2005	1,540	15.8	1,660	4.8
Mar-22-2005	1,860	15.4	1,370	3.8
Mar-23-2005	2,410	14.6	1,070	2.9
Mar-24-2005	3,130	14.6	903	2.3
Mar-25-2005	4,170	14.5	589	1.4
Mar-26-2005	4,960	15.2	470	1.0
Mar-27-2005	5,650	15.5	471	1.0
Mar-28-2005	6340	15.1	465	0.9
Mar-29-2005	7050	14.0	478	0.8
Mar-30-2005	7,400	13.5	434	0.8
Mar-31-2005	7,370	13.5	403	0.8
Mean	2,980	16.3	990	2.6

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	.	.	.
Jan-05-2005	24	.	.	4,880	68	.	.	.
Jan-12-2005	53	.	.	4,440	150	.	.	.
Jan-19-2005	32	.	.	4,860	89	.	.	.
Jan-26-2005	42	.	.	4,570	170	.	.	.
Feb-02-2005	46	.	.	4,670	130	.	.	.
Feb-09-2005	44	.	.	4,720	140	.	.	.
Feb-16-2005	120	.	.	3,320	340	.	.	.
Feb-23-2005	78	.	.	5,030	160	.	.	.
Mar-02-2005	75	.	.	5,030	NA	.	.	.
Mar-09-2005	59	.	.	5,360	150	.	.	.
Mar-16-2005	59	.	.	5,620	110	.	.	.
Mar-23-2005	67	.	.	4,970	110	.	.	.
Mar-30-2005	45	.	.	5,650	NA	.	.	.

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
Jan-04-2005	27	.	.	4,500	.	55.7	.	8.5
Jan-11-2005	64	.	.	4,400	.	47.8	.	8.4
Jan-18-2005	34	.	.	4,860	.	56.0	.	8.6
Jan-25-2005	38	.	.	4,880	.	69.2	.	8.9
Feb-01-2005	49	.	.	4,590	.	63.5	.	8.7
Feb-08-2005	42	.	.	4,930	.	67.0	.	7.2
Feb-15-2005	56	.	.	4,800	.	67.7	.	8.5
Feb-22-2005	75	.	.	4,130	.	54.0	.	7.1
Mar-01-2005	74	.	.	5,120	.	80.3	.	8.7
Mar-08-2005	61	.	.	5,350	.	89.2	.	9.2
Mar-15-2005	59	.	.	5,780	.	100	.	9.0
Mar-22-2005	63	.	.	5,340	.	89.6	.	9.0
Mar-29-2005	44	.	.	5,400	.	P	.	8.3

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
Jan-06-2005	34	10.1	7.3	4,150	63	39.0	6.8
Jan-13-2005	58	10.1	7.6	3,390	90	35.0	5.6
Jan-20-2005	39	9.3	7.5	4,860	P	55.6	8.1
Jan-27-2005	47	10.9	7.9	4,690	57	62.0	8.8
Feb-03-2005	51	11.7	8.1	4,710	66	65.2	8.5
Feb-10-2005	49	13.2	7.9	4,950	62	66.0	9.0
Feb-17-2005	123	14.6	7.4	4,570	83	62.8	7.8
Feb-24-2005	80	15.3	7.8	4,620	50	70.5	7.5
Mar-03-2005	76	15.9	7.8	5,230	64	82.8	9.1
Mar-10-2005	62	18.9	8.0	5,540	48	91.2	9.7
Mar-17-2005	59	16.9	7.8	5,960	46	109	10.0
Mar-24-2005	68	14.8	7.8	5,060	39	78.4	8.0
Mar-31-2005	47	14.5	7.9	5,570	38	86.4	8.3

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
Jan-06-2005	275	9.5	7.7	1,430	.	<0.4	1.2
Jan-13-2005	370	9.0	7.8	1,280	.	0.4	1.1
Jan-20-2005	234	9.0	7.7	1,280	.	0.5	1.1
Jan-27-2005	146	10.7	7.9	1,950	.	0.5	1.4
Feb-03-2005	127	10.8	7.8	1,930	.	0.6	1.7
Feb-10-2005	121	12.3	7.9	2,110	.	<0.4	2.0
Feb-17-2005	274	14.0	7.8	1,660	.	0.7	1.6
Feb-24-2005	455	14.1	7.9	1,360	.	0.6	1.4
Mar-03-2005	315	14.7	7.9	1,660	.	0.8	1.7
Mar-10-2005	249	19.2	8.0	1,740	.	0.8	1.9
Mar-17-2005	75	16.2	7.9	2,250	.	0.9	2.3
Mar-24-2005	244	14.4	8.0	1,870	.	1.0	1.8
Mar-31-2005	93	14.2	8.1	2,270	.	0.8	2.0

\*\* 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
Jan-06-2005	309	9.6	7.6	1,740	5.3	1.8
Jan-13-2005	428	9.2	7.8	1,610	5.5	1.7
Jan-20-2005	273	9.1	7.6	1,840	7.5	2.0
Jan-27-2005	193	10.7	7.9	2,740	15.9	3.8
Feb-03-2005	178	10.7	7.7	2,800	16.4	3.7
Feb-10-2005	170	12.6	7.9	2,990	18.4	3.9
Feb-17-2005	397	14.2	7.7	2,700	21.4	3.7
Feb-24-2005	535	14.3	7.8	1,980	12.4	2.4
Mar-03-2005	391	15.1	7.9	2,490	18.3	3.4
Mar-10-2005	311	19.2	7.9	2,550	18.0	3.4
Mar-17-2005	135	16.5	7.9	3,560	35.6	5.1
Mar-24-2005	312	14.5	7.9	2,710	19.6	3.2
Mar-31-2005	140	14.2	8.2	3,510	28.8	4.1

**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
Jan-06-2005	.	7.7	1,800	13	3.8	1.7
Jan-11-2005	.	8.1	2,080	26	8.1	2.4
Jan-19-2005	.	8.1	1,910	39	7.3	2.2
Jan-25-2005	.	7.6	3,040	41	14.8	3.4
Feb-01-2005	.	8.1	2,790	30	14.6	3.3
Feb-09-2005	.	8.1	3,110	28	17.0	3.6
Feb-15-2005	.	7.8	3,190	35	20.1	3.7
Feb-23-2005	.	8.0	1,930	43	7.7	2.3
Mar-01-2005	.	8.0	1,880	37	15.4	2.7
Mar-08-2005	.	8.0	2,450	38	17.0	2.9
Mar-14-2008	.	8.2	3,440	37	28.4	4.4
Mar-25-2005	.	8.1	2,690	26	16.0	2.9
Mar-29-2005	.	8.2	2,300	21	12.0	2.9

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
Jan-06-2005	299	9.7	7.8	1,500	0.4	1.2
Jan-13-2005	418	9.4	7.7	1,590	0.7	1.2
Jan-20-2005	243	9.4	7.4	2,040	0.5	1.1
Jan-27-2005	139	11.6	7.6	2,340	<0.4	0.8
Feb-03-2005	200	10.9	7.6	2,060	0.5	1.1
Feb-10-2005	142	12.1	7.7	2,040	0.4	1.2
Feb-17-2005	465	14.0	7.6	1,350	0.9	1.0
Feb-24-2005	596	14.5	7.6	1,670	1.5	1.4
Mar-03-2005	435	15.0	7.6	1,550	1.2	1.1
Mar-10-2005	389	18.2	7.6	1,690	1.1	1.3
Mar-17-2005	316	16.1	7.8	1,860	1.1	1.6
Mar-24-2005	468	14.3	7.4	1,500	1.1	1.1
Mar-31-2005	400	14.3	7.6	1,840	1.0	1.2

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 <sup>††</sup>	.	.	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	.	.	µS/cm	µg/L	mg/L
Jan-05-2005	20	.	.	841	0.6	0.5
Jan-12-2005	10	.	.	1,230	0.8	1.5
Jan-19-2005	20	.	.	986	3.1	0.7
Jan-26-2005	20	.	.	739	1.7	0.5
Feb-02-2005	20	.	.	683	1.5	0.6
Feb-09-2005	20	.	.	801	1.4	P
Feb-16-2005	20	.	.	816	1.7	0.6
Feb-23-2005	20	.	.	945	1.4	0.9
Mar-02-2005	0	.	.	826	2.1	0.8
Mar-09-2005	0	.	.	1,770	1.3	2.7
Mar-16-2005	0	.	.	1,470	1.6	1.8
Mar-23-2005	0	.	.	1,420	1.6	1.4
Mar-30-2005	0	.	.	1,570	P	1.7

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 <sup>††</sup>	.	.	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	.	.	µS/cm	µg/L	mg/L
Jan-05-2005	35	.	.	683	<0.4	0.3
Jan-12-2005	15	.	.	739	2.1	0.4
Jan-19-2005	10	.	.	1,510	1.7	1.6
Jan-26-2005	10	.	.	668	1.1	0.4
Feb-02-2005	20	.	.	641	1.3	0.5
Feb-09-2005	30	.	.	665	1.4	P
Feb-16-2005	37	.	.	823	1.5	0.7
Feb-23-2005	2	.	.	4,820	44.0	9.3
Mar-02-2005	0	.	.	2,010	3.0	3.6
Mar-09-2005	0	.	.	2,000	1.5	3.9
Mar-16-2005	0	.	.	2,190	1.1	3.9
Mar-23-2005	0	.	.	1,570	0.8	3.2
Mar-30-2005	0	.	.	2,160	P	3.6

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 <sup>††</sup>	.	.	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	.	.	µS/cm	µg/L	mg/L
Jan-05-2005	30	.	.	791	0.6	0.5
Jan-12-2005	45	.	.	864	2.0	0.7
Jan-19-2005	5	.	.	2,210	2.4	2.1
Jan-26-2005	60	.	.	1,090	1.4	0.8
Feb-02-2005	4	.	.	1,430	2.0	1.7
Feb-09-2005	40	.	.	981	1.3	P
Feb-16-2005	65	.	.	483	0.6	0.4
Feb-23-2005	0	.	.	1,930	2.7	2.3
Mar-02-2005	35	.	.	1,620	3.8	1.8
Mar-09-2005	30	.	.	2,420	5.3	3.3
Mar-16-2005	80	.	.	1,160	3.3	1.1
Mar-23-2005	125	.	.	879	2.8	0.7
Mar-30-2005	90	.	.	1,030	P	0.9

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 <sup>††</sup>	.	.	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	.	.	µS/cm	µg/L	mg/L
Jan-05-2005	188	.	.	1,250	0.5	1.2
Jan-12-2005	138	.	.	1,490	1.2	1.6
Jan-19-2005	102	.	.	1,510	0.9	1.4
Jan-26-2005	80	.	.	1,820	0.8	2.3
Feb-02-2005	130	.	.	2,040	0.9	2.4
Feb-09-2005	92	.	.	1,750	1.1	P
Feb-16-2005	117	.	.	1,610	1.2	2.0
Feb-23-2005	145	.	.	1,910	1.6	2.6
Mar-02-2005	91	.	.	2,250	1.7	3.0
Mar-09-2005	111	.	.	2,110	1.2	2.8
Mar-16-2005	64	.	.	2,210	1.0	2.7
Mar-23-2005	21	.	.	1,910	1.1	2.6
Mar-30-2005	39	.	.	2,130	P	2.4

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
Jan-05-2005	.	.	.	948	1.2	1.0
Jan-12-2005	.	.	.	737	1.8	0.4
Jan-19-2005	.	.	.	829	2.0	0.4
Jan-26-2005	.	.	.	453	1.2	0.3
Feb-02-2005	.	.	.	483	1.6	0.3
Feb-09-2005	.	.	.	592	1.5	P
Feb-16-2005	.	.	.	825	1.8	0.6
Feb-23-2005	.	.	.	831	3.3	0.6
Mar-02-2005	.	.	.	562	1.3	0.4
Mar-09-2005	.	.	.	692	2.1	0.5
Mar-16-2005	.	.	.	624	2.4	0.4
Mar-23-2005	.	.	.	626	2.0	0.4
Mar-30-2005	.	.	.	683	P	0.4



**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
Jan-06-2005	2,350	8.6	7.5	344	<0.4	0.2
Jan-13-2005	3,700	9.3	7.6	179	<0.4	0.1
Jan-20-2005	1,910	8.5	7.2	579	<0.4	0.3
Jan-27-2005	763	10.9	7.3	1,170	<0.4	0.3
Feb-03-2005	1,090	10.9	7.2	954	<0.4	0.4
Feb-10-2005	585	12.6	7.7	1,410	<0.4	0.5
Feb-17-2005	1,240	14.1	7.5	762	<0.4	0.3
Feb-24-2005	2,160	14.7	7.1	853	0.7	0.6
Mar-03-2005	1,570	15.4	7.2	866	0.8	0.4
Mar-10-2005	975	18.9	7.9	1,350	0.8	0.8
Mar-17-2005	676	16.5	7.3	1,670	0.7	1.0
Mar-24-2005	2,120	14.7	7.2	350	<0.4	0.1
Mar-31-2005	2,350	14.7	7.2	564	0.4	0.3

**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
Jan-04-2005	.	.	.	196	0.4	0.1
Jan-11-2005	.	.	.	128	NA	0.1
Jan-25-2005	.	.	.	495	0.4	0.1
Feb-01-2005	.	.	.	370	<0.4	0.0
Feb-08-2005	.	.	.	547	<0.4	0.0
Feb-15-2005	.	.	.	NA	<0.4	0.1
Feb-23-2005	.	.	.	NA	0.4	0.0
Mar-01-2005	.	.	.	NA	<0.4	0.1
Mar-08-2005	.	.	.	NA	<0.4	0.1
Mar-23-2005	.	.	.	NA	<0.4	0.1
Mar-29-2005	.	.	.	NA	0.5	0.0

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
Jan-06-2005	3,370	9.3	7.5	450	0.6	0.4
Jan-13-2005	6090	9.5	7.4	399	0.7	0.3
Jan-20-2005	3,100	8.7	7.5	719	1.3	0.5
Jan-27-2005	1,640	11.0	7.6	1,230	2.1	0.6
Feb-03-2005	2,170	10.7	7.5	1,060	1.7	0.8
Feb-10-2005	1,470	12.5	7.8	1,370	2.3	0.9
Feb-17-2005	2,260	14.1	7.7	1,140	2.3	0.8
Feb-24-2005	3,850	14.9	7.4	926	1.5	0.7
Mar-03-2005	2,710	15.2	7.7	1,040	2.8	0.8
Mar-10-2005	2,000	18.7	7.8	1,430	3.5	1.2
Mar-17-2005	1,480	16.8	7.7	1,800	5.6	1.5
Mar-24-2005	3,130	14.5	7.7	741	1.9	0.5
Mar-31-2005	7,370	13.1	7.5	393	0.8	0.3

**Table 20. Summary of fathead minnow (*Pimephales promelas*) larvae survival in 7-day tests using water samples collected from April 2004 to March 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	%	%	%	%	%	%
Apr-2004	100	100	95	95	90	98
May-2004	100	100	100	100	100	100
Jun-2004	98	93	98	100	88	95
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†

**Table 21. Summary of fathead minnow (*Pimephales promelas*) larvae growth in 7-day tests using water samples collected from April 2004 to March 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
Apr-2004	0.59	0.57	0.63	0.54	0.56	0.60
May-2004	0.49	0.55	0.53	0.57	0.43	0.49
Jun-2004	0.42	0.42	0.40	0.45	0.36	0.40
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

**Table 22. Summary of *Daphnia magna* survival in 7-day tests using water samples collected from April 2004 to March 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	%	%	%	%	%	%
Apr-2004	100	100	90	90	90	100
May-2004	90	100	90	80	90	90
Jun-2004	90	100	100	90	90	100
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

**Table 23. Summary of *Daphnia magna* reproduction in 7-day tests using water samples collected from April 2004 to March 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
Apr-2004	35.5	34.3	35.9	34.6	21.7	15.7
May-2004	32.4	29.6	37.5	34.9	30.7	24.7
Jun-2004	25.8	29.8	25.6	16.7	19.0	30.0
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

**Table 24. Summary of *Selenastrum capricornutum* growth in 4-day tests using water samples collected from April 2004 to March 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 <sup>5</sup> cells/mL	10 <sup>5</sup> cells/mL	10 <sup>5</sup> cells/mL	10 <sup>5</sup> cells/mL	10 <sup>5</sup> cells/mL	10 <sup>5</sup> cells/mL
Apr-2004	19.9	31.6	20.0	25.5	19.5	26.5
May-2004	19.3*	29.5	25.1	25.1	24.5	14.5
Jun-2004	12.1	25.2	18.1	21.5	15.4	22.4
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

**Table 25. Summary of selenium concentrations in grab water samples collected at study stations for use in laboratory toxicity tests, January 2005 to March 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
Jan-03-2005	44	0.6	4.5	0.6	0.4
Jan-05-2005	42	<0.4	4.8	0.5	<0.4
Jan-07-2005	38	<0.4	4.4	1.1	0.5
Feb-14-2005	63	0.5	20	0.8	<0.4
Feb-16-2005	67	0.6	16	0.8	0.5
Feb-18-2005	32	0.6	8.0	0.8	1.1
Mar-14-2005	100	0.9	30	1.0	0.8
Mar-16-2005	109	0.9	38	1.1	1.1
Mar-18-2005	99	0.9	31	1.2	1.2

**Table 26. Summary of total suspended solids concentrations in grab water samples collected at study stations for use in laboratory toxicity tests, January 2005 to March 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
Jan-03-2005	37	56	87	38	8
Jan-05-2005	92	68	69	31	8
Jan-07-2005	179	92	109	63	13
Feb-14-2005	1,086	58	75	76	33
Feb-16-2005	82	64	70	91	26
Feb-18-2005	155	182	256	50	32
Mar-14-2005	64	63	73	43	22
Mar-16-2005	70	75	68	50	41
Mar-18-2005	78	78	64	58	24

**Table 27. Explanations of footnotes and agency abbreviations.**

<b>Footnote</b>	<b>Explanation</b>
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 <sup>6</sup> 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