GRASSLAND BYPASS PROJECT

MONTHLY DATA REPORT

July 2005

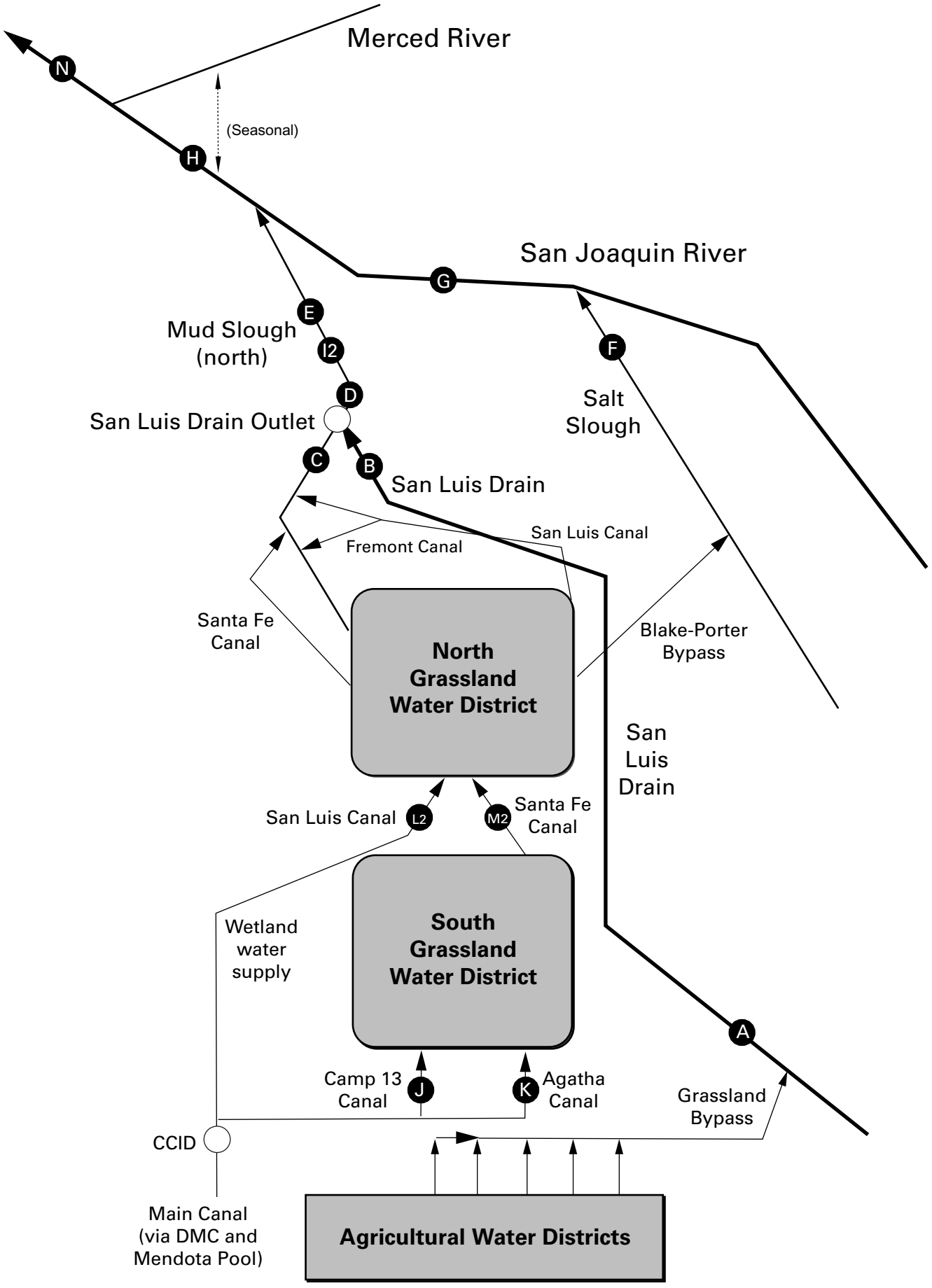
October 18, 2005

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


Merced River
N
(Seasonal)
H
San Joaquin River
G
E
Mud Slough
(north)
I2
F
D
San Luis Drain Outlet
Salt
Slough
C
B
San Luis Drain
San Luis Canal
Fremont Canal
Santa Fe
Canal
North
Grassland
Water District
Blake-Porter
Bypass
San
Luis
Drain
San Luis Canal
L2
M2
Santa Fe
Canal
Wetland
water
supply
South
Grassland
Water District
A
Camp 13
Canal
J
K
Agatha
Canal
Grassland
Bypass
CCID
Main Canal
(via DMC and
Mendota Pool)
Agricultural Water Districts

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MONTHLY DATA REPORT

LIST OF TABLES FOR MONTHLY REPORT

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

See Table 27 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Specific Conductance
DATA SOURCE	SLDMWA	SLDMWA
UNITS	cfs	µS/cm
Jul-01-2005	49	4,240
Jul-02-2005	45	4,560
Jul-03-2005	42	4,820
Jul-04-2005	46	4,640
Jul-05-2005	47	4,810
Jul-06-2005	48	4,830
Jul-07-2005	45	4,680
Jul-08-2005	43	4,380
Jul-09-2005	44	4,270
Jul-10-2005	47	4,250
Jul-11-2005	49	4,230
Jul-12-2005	46	4,100
Jul-13-2005	48	4,060
Jul-14-2005	44	4,270
Jul-15-2005	42	4,140
Jul-16-2005	44	4,080
Jul-17-2005	53	4,030
Jul-18-2005	51	3,990
Jul-19-2005	48	4,040
Jul-20-2005	41	4,070
Jul-21-2005	39	3,940
Jul-22-2005	41	3,950
Jul-23-2005	44	3,790
Jul-24-2005	42	4,090
Jul-25-2005	44	4,110
Jul-26-2005	38	4,170
Jul-27-2005	36	4,320
Jul-28-2005	38	4,120
Jul-29-2005	44	3,950
Jul-30-2005	45	3,850
Jul-31-2005	51	3,790
Mean	45	4,210

Table 2a. Continuous water monitoring at Station B (discharge from San Luis Drain), July 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
Jul-01-2005	53	28.1	10.0	4,270	40.8	11.7
Jul-02-2005	50	28.6	10.0	4,370	41.5	11.2
Jul-03-2005	46	28.0	11.0	4,500	49.0	12.2
Jul-04-2005	44	27.4	9.3	4,470	48.2	11.4
Jul-05-2005	47	27.3	9.0	4,570	43.8	11.1
Jul-06-2005	49	26.9	11.0	5,000	48.6	12.8
Jul-07-2005	49	26.6	11.0	4,930	48.0	12.7
Jul-08-2005	47	26.3	10.0	4,940	48.6	12.3
Jul-09-2005	45	26.1	11.0	5,000	50.1	12.2
Jul-10-2005	47	25.9	9.5	4,950	49.8	12.6
Jul-11-2005	50	26.6	10.0	4,550	40.0	10.8
Jul-12-2005	51	27.8	9.4	4,460	38.7	10.6
Jul-13-2005	48	28.9	9.2	4,400	43.8	11.3
Jul-14-2005	49	29.6	NA	NA	NA	NA
Jul-15-2005	46	29.7	NA	NA	NA	NA
Jul-16-2005	46	29.6	P	4,190	38.1	9.5
Jul-17-2005	49	29.9	9.1	4,420	39.8	10.5
Jul-18-2005	54	29.9	9.2	4,290	35.4	10.3
Jul-19-2005	52	29.3	8.6	4,320	33.6	9.4
Jul-20-2005	50	28.5	7.8	4,110	36.4	9.8
Jul-21-2005	44	28.6	7.9	4,200	35.3	8.4
Jul-22-2005	41	27.7	8.1	4,250	35.7	7.9
Jul-23-2005	43	27.5	8.2	4,230	34.2	7.9
Jul-24-2005	45	28.2	8.6	4,210	33.4	8.1
Jul-25-2005	44	28.5	8.0	4,180	34.2	8.1
Jul-26-2005	45	28.6	7.7	4,080	33.2	8.1
Jul-27-2005	40	28.6	7.6	4,010	32.8	7.1
Jul-28-2005	38	28.3	0.8	4,150	32.6	6.7
Jul-29-2005	40	28.3	7.8	4,180	34.8	7.5
Jul-30-2005	45	28.5	8.3	4,290	34.8	8.4
Jul-31-2005	47	28.8	8.9	4,300	35.4	9.0
Mean	47	28.1	8.8	4,410	39.7	10.0
Total Acre-feet	**2,860**					
Total (lbs)						**290**

Load Limitation for July 2005 (lbs)	**356**

Table 2b. Continuous water monitoring at San Luis Drain Outlet, July 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
Jul-01-2005	53	40.8	11.7
Jul-02-2005	50	41.5	11.2
Jul-03-2005	46	49.0	12.2
Jul-04-2005	43	48.2	11.2
Jul-05-2005	46	43.8	10.9
Jul-06-2005	48	48.6	12.6
Jul-07-2005	49	48.0	12.7
Jul-08-2005	46	48.6	12.1
Jul-09-2005	44	50.1	11.9
Jul-10-2005	45	49.8	12.1
Jul-11-2005	48	40.0	10.4
Jul-12-2005	50	38.7	10.4
Jul-13-2005	47	43.8	11.1
Jul-14-2005	48	NA	NA
Jul-15-2005	44	NA	NA
Jul-16-2005	43	38.1	8.8
Jul-17-2005	45	39.8	9.7
Jul-18-2005	53	35.4	10.1
Jul-19-2005	52	33.6	9.4
Jul-20-2005	49	36.4	9.6
Jul-21-2005	42	35.3	8.0
Jul-22-2005	39	35.7	7.5
Jul-23-2005	41	34.2	7.6
Jul-24-2005	44	33.4	7.9
Jul-25-2005	43	34.2	7.9
Jul-26-2005	44	33.2	7.9
Jul-27-2005	38	32.8	6.7
Jul-28-2005	36	32.6	6.3
Jul-29-2005	38	34.8	7.1
Jul-30-2005	44	34.8	8.3
Jul-31-2005	46	35.4	8.8
Mean	45	39.7	9.7
Total Acre-feet	**2,780**		
Total (lbs)			**282**

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

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.

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

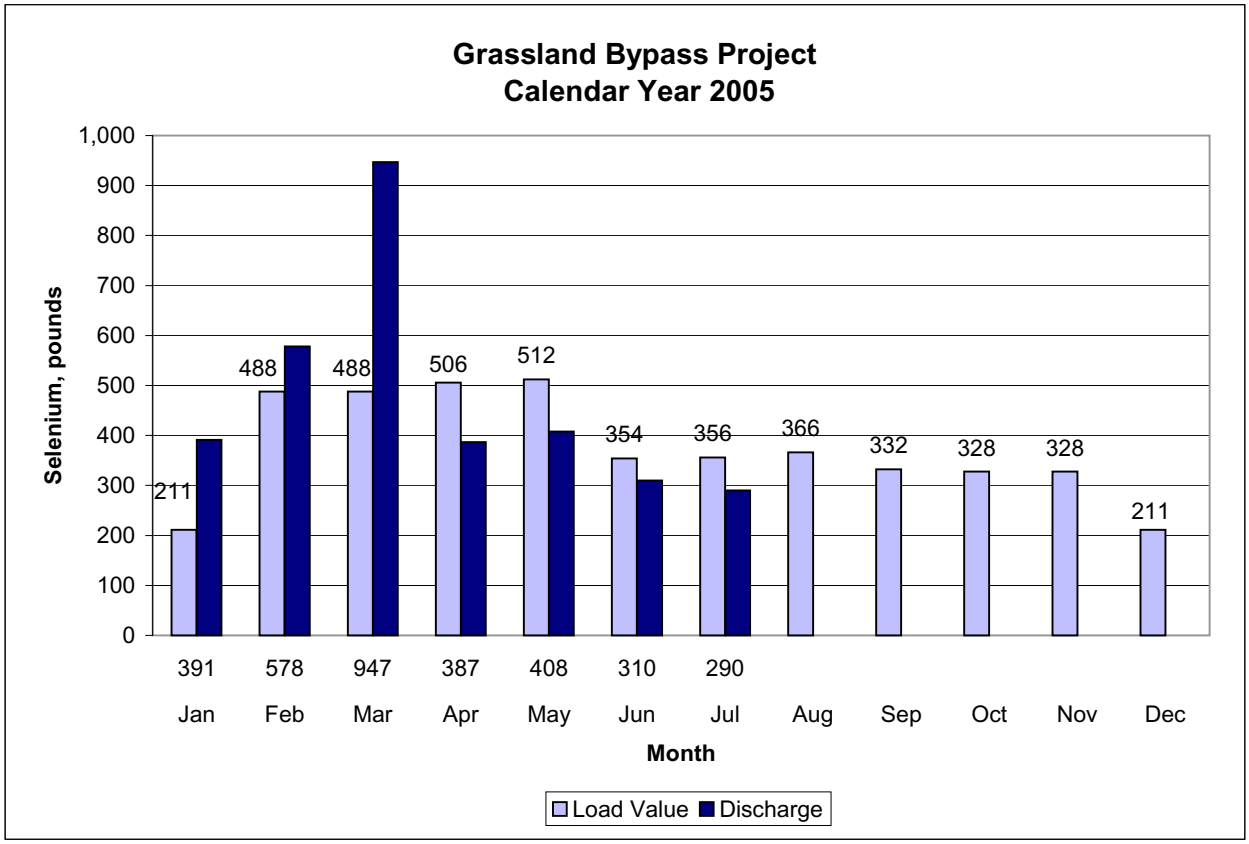

Table 3. Continuous water monitoring at Station D (Mud Slough North downstream of drainage discharges), July 2005.

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
Jul-01-2005	93	28.2	3,050
Jul-02-2005	90	28.6	3,020
Jul-03-2005	93	27.9	2,850
Jul-04-2005	99	27.3	2,620
Jul-05-2005	104	27.4	2,700
Jul-06-2005	96	27.2	3,230
Jul-07-2005	87	27.0	3,480
Jul-08-2005	84	26.5	3,390
Jul-09-2005	77	26.2	3,520
Jul-10-2005	88	25.9	3,260
Jul-11-2005	90	26.7	3,240
Jul-12-2005	98	28.0	3,080
Jul-13-2005	91	29.2	3,030
Jul-14-2005	87	29.7	3,080
Jul-15-2005	93	29.6	2,730
Jul-16-2005	83	29.5	2,680
Jul-17-2005	73	29.8	2,950
Jul-18-2005	79	29.8	3,030
Jul-19-2005	76	29.3	3,070
Jul-20-2005	78	28.6	2,960
Jul-21-2005	68	28.6	2,970
Jul-22-2005	56	27.5	3,320
Jul-23-2005	59	27.7	3,280
Jul-24-2005	69	28.4	3,070
Jul-25-2005	68	28.5	3,010
Jul-26-2005	63	28.7	3,120
Jul-27-2005	50	28.6	3,310
Jul-28-2005	49	28.2	3,400
Jul-29-2005	52	28.4	3,300
Jul-30-2005	60	28.6	3,210
Jul-31-2005	65	28.9	3,310
Mean	78	28.2	3,110

Table 4. Continuous water monitoring at Station F (Salt Slough at Highway 165), July 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
Jul-01-2005	211	27.7	904
Jul-02-2005	209	27.9	892
Jul-03-2005	209	26.8	871
Jul-04-2005	195	26.4	877
Jul-05-2005	225	26.4	838
Jul-06-2005	270	25.8	786
Jul-07-2005	283	25.7	817
Jul-08-2005	274	25.4	843
Jul-09-2005	251	25.2	880
Jul-10-2005	224	25.1	952
Jul-11-2005	208	26.0	979
Jul-12-2005	220	27.4	942
Jul-13-2005	226	28.6	871
Jul-14-2005	208	29.0	849
Jul-15-2005	180	28.8	902
Jul-16-2005	187	28.8	930
Jul-17-2005	203	29.1	907
Jul-18-2005	223	29.0	879
Jul-19-2005	220	28.2	894
Jul-20-2005	206	27.8	906
Jul-21-2005	199	28.0	900
Jul-22-2005	199	26.9	887
Jul-23-2005	191	26.8	877
Jul-24-2005	183	28.0	840
Jul-25-2005	178	27.8	858
Jul-26-2005	183	27.8	839
Jul-27-2005	174	27.7	869
Jul-28-2005	148	27.6	922
Jul-29-2005	147	27.6	956
Jul-30-2005	166	27.9	928
Jul-31-2005	192	28.1	860
Mean	206	27.4	890

Table 5. Continuous water monitoring at Station N (San Joaquin River at Crow's Landing), July 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
Jul-01-2005	2,490	24.4	448	1.1
Jul-02-2005	2,680	24.0	371	0.9
Jul-03-2005	2,550	24.0	401	1.0
Jul-04-2005	2,410	23.7	449	1.5
Jul-05-2005	2,230	23.2	486	1.4
Jul-06-2005	2,110	22.9	542	1.6
Jul-07-2005	2,080	22.8	570	1.6
Jul-08-2005	2,060	22.3	590	1.4
Jul-09-2005	2,080	21.8	563	1.4
Jul-10-2005	2,080	21.4	552	1.3
Jul-11-2005	2,000	22.2	620	1.5
Jul-12-2005	1,840	23.6	660	1.5
Jul-13-2005	1,670	24.8	677	1.6
Jul-14-2005	1,600	25.4	701	1.5
Jul-15-2005	1,480	25.6	746	1.8
Jul-16-2005	1,420	25.8	795	2.0
Jul-17-2005	1,430	25.9	782	1.5
Jul-18-2005	1,440	25.9	743	1.7
Jul-19-2005	1,380	25.5	733	2.2
Jul-20-2005	1,360	25.3	762	1.9
Jul-21-2005	1,320	25.3	791	1.5
Jul-22-2005	1,310	24.5	NA	NA
Jul-23-2005	1,290	24.7	NA	NA
Jul-24-2005	1,270	25.3	NA	NA
Jul-25-2005	1,260	25.5	NA	NA
Jul-26-2005	1,190	25.8	NA	NA
Jul-27-2005	1,160	25.9	NA	NA
Jul-28-2005	1,140	25.6	NA	NA
Jul-29-2005	1,080	25.5	NA	NA
Jul-30-2005	1,060	25.8	NA	NA
Jul-31-2005	1,070	26.2	NA	NA
Mean	1,660	24.5	620	1.5

PRELIMINARY RESULTS

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	.	.	.
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	.	.	.
Jul-06-2005	48	.	.	4,880	95	.	.	.
Jul-13-2005	48	.	.	4,080	89	.	.	.
Jul-20-2005	41	.	.	4,220	P	.	.	.
Jul-27-2005	36	.	.	4,020	100	.	.	.

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
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	.	7.7
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
Jul-05-2005	47	.	.	4780	.	47.8	.	9.1
Jul-12-2005	46	.	.	4470	.	39.7	.	8.7
Jul-19-2005	48	.	.	4200	.	35.0	.	P
Jul-26-2005	38	.	.	4030	.	32.6	.	8.1

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
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	7.2
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	7.0
Jul-07-2005	49	25.5	8.5	4,980	61	47.2	9.9
Jul-13-2005	48	28.7	8.7	4,530	49	43.6	8.7
Jul-21-2005	44	27.7	8.1	4,210	P	17.8	8.2
Jul-28-2005	38	27.3	8.5	4,130	39	31.6	7.8

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
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	1.0
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	1.0
Jul-07-2005	38	25.9	8.0	1,070	.	1.0	0.9
Jul-13-2005	43	28.1	7.3	970	.	1.1	1.0
Jul-21-2005	24	27.0	8.2	1,140	.	1.2	1.3
Jul-28-2005	11	29.3	8.7	1,270	.	0.9	1.4

++ 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
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	4.5
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	4.5
Jul-07-2005	87	25.2	7.9	3,410	28.6	6.3
Jul-13-2005	91	27.9	7.2	2,740	19.0	5.0
Jul-21-2005	68	27.2	8.3	2,930	9.7	5.3
Jul-28-2005	49	27.6	8.6	3,370	22.7	6.1

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
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
Jul-06-2005	.	8.6	3,300	24	22.6	5.4
Jul-12-2005	.	8.6	2,920	29	19.3	5.2
Jul-19-2005	.	8.7	3,670	19	22.6	6.6
Jul-26-2005	.	8.6	3,260	18	17.6	5.5

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
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	0.8
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	0.4
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	0.4
Jul-07-2005	283	24.1	7.6	801	1.0	0.4
Jul-13-2005	226	28.1	7.2	779	0.5	0.4
Jul-21-2005	199	26.7	7.9	911	1.0	0.5
Jul-28-2005	148	25.8	7.8	1,010	0.7	0.6

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
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	0.1
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
Jul-06-2005	15	.	.	361	1.1	0.3
Jul-13-2005	15	.	.	192	0.8	0.2
Jul-20-2005	15	.	.	352	1.1	P
Jul-27-2005	15	.	.	391	0.9	0.3

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
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	0.1
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
Jul-06-2005	15	.	.	260	0.9	0.2
Jul-13-2005	0	.	.	154	0.7	0.2
Jul-20-2005	15	.	.	411	1.0	P
Jul-27-2005	15	.	.	454	1.1	0.3

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
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	0.4
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
Jul-06-2005	35	.	.	671	1.6	0.6
Jul-13-2005	5	.	.	701	1.7	0.8
Jul-20-2005	0	.	.	1,170	1.8	P
Jul-27-2005	0	.	.	1,060	1.5	1.1

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
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	0.9
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
Jul-06-2005	55	.	.	820	1.5	1.2
Jul-13-2005	90	.	.	800	1.3	1.5
Jul-20-2005	44	.	.	928	1.6	P
Jul-27-2005	59	.	.	911	1.3	1.4

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
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	0.1
Jun-15-2005	.	.	.	184	0.8	0.2
Jun-22-2005	.	.	.	198	1.1	0.2
Jun-29-2005	.	.	.	154	0.7	0.2
Jul-06-2005	.	.	.	264	1.0	0.2
Jul-13-2005	.	.	.	221	1.1	0.2
Jul-20-2005	.	.	.	292	0.9	P
Jul-27-2005	.	.	.	307	1.0	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
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	0.2
Jul-07-2005	401	25.6	7.0	1,050	0.7	0.4
Jul-13-2005	359	27.4	7.7	947	0.4	0.4
Jul-21-2005	284	27.0	7.8	1,220	0.7	0.5
Jul-28-2005	240	27.2	7.8	1,310	0.5	0.5

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
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
Jul-05-2005	.	.	.	NA	0.5	0.2
Jul-12-2005	.	.	.	NA	4.2	1.3
Jul-19-2005	.	.	.	NA	4.6	1.6
Jul-29-2005	.	.	.	NA	4.0	1.6

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
May-05-2005	2,340	17.2	7.6	601	1.5	0.4
May-12-2005	3150	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	0.1
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	0.4
Jul-07-2005	2,080	22.3	7.5	559	1.4	0.4
Jul-13-2005	1,670	23.8	7.7	691	1.5	0.6
Jul-21-2005	1,320	24.7	7.7	787	1.7	0.5
Jul-28-2005	1,140	25.1	7.9	796	1.4	0.6

Table 20. Summary of fathead minnow (*Pimephales promelas*) larvae survival in 7-day tests using water samples collected from August 2004 to July 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	%	%	%	%	%	%
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
Jul-2005	98	100	95	98	80	93

Table 21. Summary of fathead minnow (*Pimephales promelas*) larvae growth in 7-day tests using water samples collected from August 2004 to July 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
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
Jul-2005	0.39	0.39	0.35	0.33	0.35	0.39

Table 22. Summary of *Daphnia magna* survival in 7-day tests using water samples collected from August 2004 to July 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	%	%	%	%	%	%
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
Jul-2005	90	100	80	90	80	90

Table 23. Summary of *Daphnia magna* reproduction in 7-day tests using water samples collected from August 2004 to July 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
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
Jul-2005	41.8	49.4	43.1	45.5	39.6	34.0

Table 24. Summary of *Selenastrum capricornutum* growth in 4-day tests using water samples collected from August 2004 to July 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
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
Jul-2005	10.0*	13.0	7.4*	7.7*	11.9	13.0

Table 25. Summary of selenium concentrations in grab water samples collected at study stations for use in laboratory toxicity tests, May 2005 to July 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
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
Jul-18-2005	36	0.7	24	0.5	<0.4
Jul-20-2005	36	1.0	19	0.4	<0.4
Jul-22-2005	39	1.0	22	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, May 2005 to July 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
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
Jul-18-2005	18	72	75	161	31
Jul-20-2005	36	83	45	113	43
Jul-22-2005	54	175	102	212	37

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 (10^6cell/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.
v	Based on definitive bioassay, NOEC is 50 percent
D	Sample was dechlorinated