

GRASSLAND BYPASS PROJECT

MONTHLY DATA REPORT

October 2007

February 20, 2008

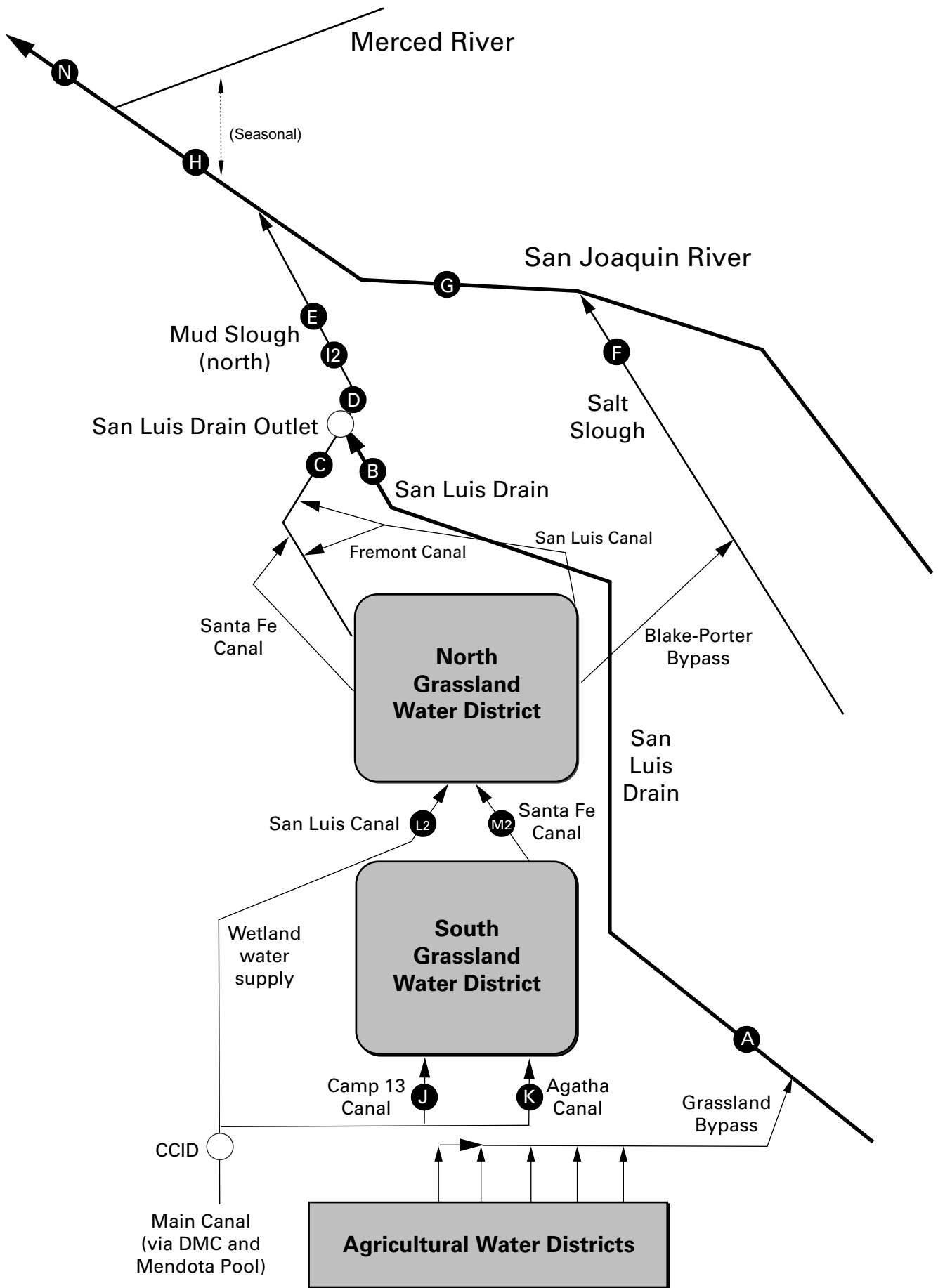
Preliminary Results

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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Table 1. Continuous water monitoring at Station A (inflow to San Luis Drain), October 2007.

See Table 27 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Specific Conductance
DATA SOURCE	SLDMWA	SLDMWA
UNITS	cfs	µS/cm
Oct-01-2007	5	5,350
Oct-02-2007	5	5,330
Oct-03-2007	5	5,390
Oct-04-2007	5	5,390
Oct-05-2007	5	4,500
Oct-06-2007	5	4,940
Oct-07-2007	4	5,160
Oct-08-2007	5	5,290
Oct-09-2007	6	4,810
Oct-10-2007	5	4,410
Oct-11-2007	6	4,410
Oct-12-2007	6	4,420
Oct-13-2007	9	3,660
Oct-14-2007	9	3,270
Oct-15-2007	9	3,630
Oct-16-2007	9	3,520
Oct-17-2007	9	3,430
Oct-18-2007	9	3,470
Oct-19-2007	10	3,710
Oct-20-2007	9	3,470
Oct-21-2007	7	4,070
Oct-22-2007	5	4,650
Oct-23-2007	5	4,860
Oct-24-2007	5	4,860
Oct-25-2007	6	4,880
Oct-26-2007	7	4,840
Oct-27-2007	8	4,990
Oct-28-2007	15	4,260
Oct-29-2007	9	4,380
Oct-30-2007	8	4,810
Oct-31-2007	7	4,860
Mean	6.9	4,480

Table 2a. Continuous water monitoring at Stations B and B2 (San Luis Drain Terminus), October 2007.

See Table 27 for explanation of footnotes and agency abbreviations.

PARAMETER	San Luis Drain Outlet Flow	Temperature	Boron	Specific Conductance	Selenium (total)	Selenium (total) Load
DATA SOURCE	SLDMWA*	SLDMWA	CVRWQCB	SLDMWA	CVRWQCB	Computed
UNITS	cfs	°C	mg/L	µS/cm	µg/L	lbs
Oct-01-2007	12	19.7	6.0	3,530	22.2	1.5
Oct-02-2007	12	19.5	5.4	3,300	19.2	1.3
Oct-03-2007	12	19.9	5.4	3,340	19.7	1.2
Oct-04-2007	11	20.0	6.2	3,680	24.3	1.4
Oct-05-2007	11	19.2	6.1	3,650	24.3	1.5
Oct-06-2007	11	18.5	5.9	3,760	24.4	1.5
Oct-07-2007	12	17.2	6.1	3,840	24.7	1.6
Oct-08-2007	12	17.9	6.0	3,820	23.8	1.5
Oct-09-2007	12	18.0	5.9	3,700	23.1	1.5
Oct-10-2007	12	18.6	5.8	3,690	21.8	1.4
Oct-11-2007	13	18.5	5.9	3,640	21.2	1.5
Oct-12-2007	14	18.7	5.6	3,610	20.6	1.5
Oct-13-2007	15	18.4	6.1	3,640	21.0	1.7
Oct-14-2007	16	19.2	5.5	3,490	18.9	1.6
Oct-15-2007	17	19.2	5.2	3,320	18.0	1.6
Oct-16-2007	17	19.6	5.7	3,580	21.6	1.9
Oct-17-2007	18	19.2	5.6	3,580	19.6	1.9
Oct-18-2007	18	18.7	5.1	3,300	13.5	1.3
Oct-19-2007	18	18.9	P	3,370	15.5	1.5
Oct-20-2007	16	18.8	P	3,250	13.9	1.2
Oct-21-2007	18	15.8	P	2,990	11.7	1.1
Oct-22-2007	17	15.8	P	3,090	12.6	1.2
Oct-23-2007	15	16.4	P	3,000	12.0	1.0
Oct-24-2007	14	17.0	P	3,010	10.7	0.8
Oct-25-2007	14	18.2	P	2,960	9.5	0.7
Oct-26-2007	14	18.5	P	2,900	9.1	0.7
Oct-27-2007	14	18.7	P	3,070	12.9	1.0
Oct-28-2007	15	19.0	P	2,970	11.8	1.0
Oct-29-2007	19	19.4	P	2,980	10.3	1.1
Oct-30-2007	17	19.2	P	3,170	10.6	1.0
Oct-31-2007	16	18.7	P	3,480	12.6	1.1
Mean	15	18.5	5.8	3,380	16.7	1.3
Total Acre-feet	900					
Total (lbs)						41

Load Limitation for October 2007 (lbs)	219
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Se concentrations for Sep 21-30, 2007 were used from Summers Engineering, Inc.

◆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 is 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. Water quality data are still collected at the old Site B.

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

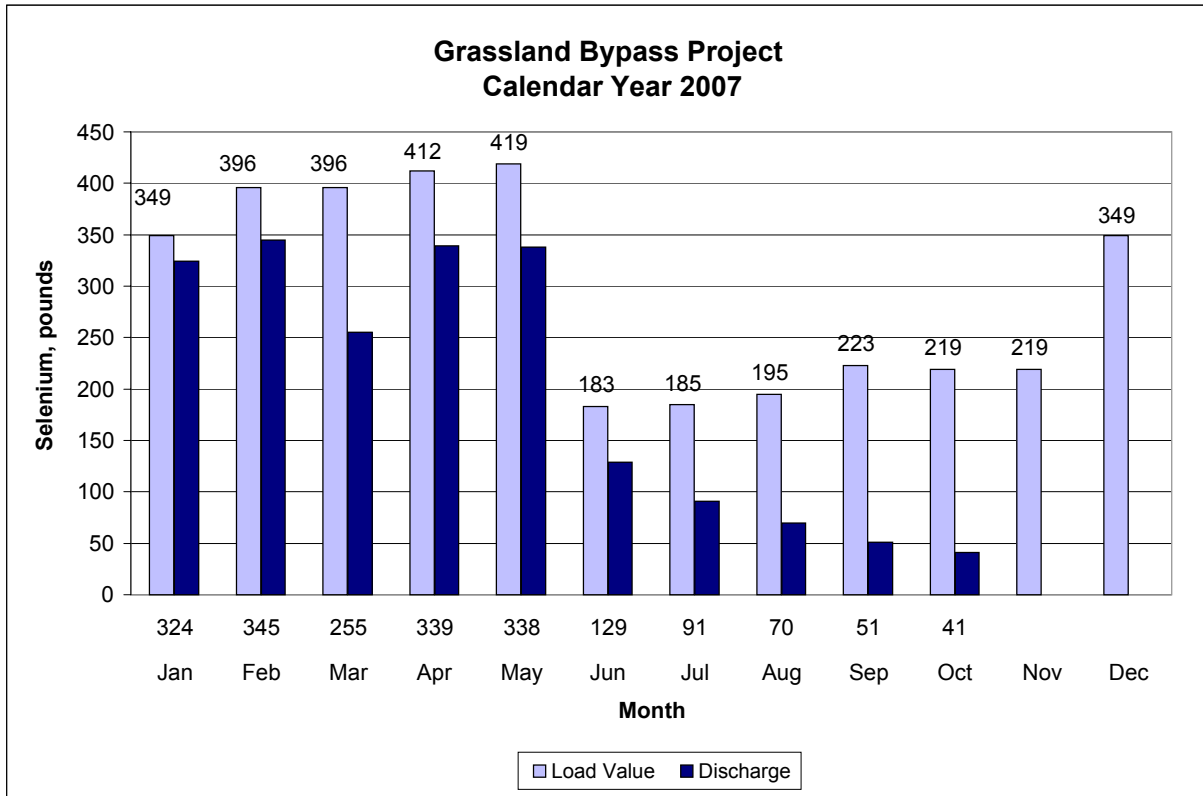


Table 3. Continuous water monitoring at Station D (Mud Slough North downstream of drainage discharges), October 2007.

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
Oct-01-2007	72	19.4	1,280
Oct-02-2007	64	19.5	1,380
Oct-03-2007	62	20.1	1,370
Oct-04-2007	71	19.4	1,310
Oct-05-2007	78	18.4	1,320
Oct-06-2007	79	17.2	1,310
Oct-07-2007	79	16.9	1,370
Oct-08-2007	78	17.9	1,390
Oct-09-2007	77	18.4	1,420
Oct-10-2007	78	18.6	1,440
Oct-11-2007	83	18.3	1,440
Oct-12-2007	93	18.0	1,390
Oct-13-2007	109	18.0	1,330
Oct-14-2007	131	18.9	1,280
Oct-15-2007	142	19.2	1,240
Oct-16-2007	147	18.9	1,230
Oct-17-2007	150	18.2	1,290
Oct-18-2007	157	17.9	1,260
Oct-19-2007	153	18.8	1,270
Oct-20-2007	160	18.4	1,250
Oct-21-2007	181	15.3	1,180
Oct-22-2007	198	15.7	1,130
Oct-23-2007	182	16.8	1,190
Oct-24-2007	164	18.0	1,260
Oct-25-2007	165	18.7	1,260
Oct-26-2007	162	18.5	1,290
Oct-27-2007	159	18.5	1,300
Oct-28-2007	151	19.1	1,340
Oct-29-2007	142	19.4	1,410
Oct-30-2007	130	18.7	1,490
Oct-31-2007	121	17.9	1,540
Mean	123	18.3	1,320

Table 4. Continuous water monitoring at Station F (Salt Slough at Highway 165), October 2007.

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
Oct-01-2007	102	19.4	1,440
Oct-02-2007	92	19.5	1,510
Oct-03-2007	80	20.0	1,560
Oct-04-2007	63	19.1	1,590
Oct-05-2007	62	17.6	1,560
Oct-06-2007	62	16.5	1,550
Oct-07-2007	63	16.5	1,530
Oct-08-2007	66	17.7	1,500
Oct-09-2007	72	18.2	1,460
Oct-10-2007	70	18.4	1,460
Oct-11-2007	82	18.0	1,360
Oct-12-2007	77	17.6	1,320
Oct-13-2007	87	17.7	1,370
Oct-14-2007	113	18.6	1,240
Oct-15-2007	141	18.7	1,080
Oct-16-2007	132	18.4	1,130
Oct-17-2007	132	17.9	1,220
Oct-18-2007	138	17.8	1,200
Oct-19-2007	132	18.3	1,250
Oct-20-2007	115	17.8	1,390
Oct-21-2007	106	15.1	1,430
Oct-22-2007	112	15.7	1,410
Oct-23-2007	125	16.5	1,320
Oct-24-2007	133	17.3	1,330
Oct-25-2007	137	17.6	1,350
Oct-26-2007	143	17.6	1,320
Oct-27-2007	134	17.6	1,400
Oct-28-2007	130	18.4	1,410
Oct-29-2007	124	18.7	1,400
Oct-30-2007	130	17.9	1,390
Oct-31-2007	136	17.1	1,310
Mean	106	17.8	1,380

Table 5. Continuous water monitoring at Station N (San Joaquin River at Crow's Landing), October 2007.

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
Oct-01-2007	462	19.5	1,020	0.9
Oct-02-2007	445	19.6	1,010	1.0
Oct-03-2007	423	19.8	1,150	0.9
Oct-04-2007	387	19.2	1,190	1.0
Oct-05-2007	371	18.0	1,200	1.0
Oct-06-2007	378	16.9	1,220	1.0
Oct-07-2007	363	16.7	1,260	1.0
Oct-08-2007	380	17.5	1,210	1.0
Oct-09-2007	386	18.1	1,180	1.1
Oct-10-2007	363	18.7	1,190	1.1
Oct-11-2007	364	18.2	1,270	1.1
Oct-12-2007	418	18.1	1,190	0.9
Oct-13-2007	449	17.8	1,110	1.1
Oct-14-2007	467	18.6	1,130	0.9
Oct-15-2007	475	18.9	1,110	1.0
Oct-16-2007	520	NA	1,010	1.0
Oct-17-2007	529	18.2	996	1.0
Oct-18-2007	547	17.7	977	1.1
Oct-19-2007	536	18.3	1,040	1.0
Oct-20-2007	525	18.3	1,060	1.0
Oct-21-2007	542	15.6	1,060	0.9
Oct-22-2007	558	15.7	1,060	0.8
Oct-23-2007	562	16.6	1,010	0.7
Oct-24-2007	575	17.3	1,060	0.7
Oct-25-2007	694	17.7	1,040	0.7
Oct-26-2007	1,020	17.3	710	0.5
Oct-27-2007	1,210	17.1	550	<0.4
Oct-28-2007	1,240	17.5	780	<0.4
Oct-29-2007	1,280	17.7	540	0.9
Oct-30-2007	1,300	17.4	640	<0.4
Oct-31-2007	1,330	16.8	560	0.6
Mean	620	17.8	1,020	0.9

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	.	.	.
Aug-01-2007	21	.	.	3,680	34	.	.	.
Aug-08-2007	15	.	.	4,030	9	.	.	.
Aug-15-2007	20	.	.	3,740	11	.	.	.
Aug-22-2007	13	.	.	4,730	18	.	.	.
Aug-29-2007	12	.	.	4,290	10	.	.	.
Sep-05-2007	12	.	.	4,280	13	.	.	.
Sep-12-2007	9	.	.	4,210	NA	.	.	.
Sep-19-2007	13	.	.	4,390	17	.	.	.
Sep-26-2007	7	.	.	4,940	NA	.	.	.
Oct-03-2007	5	.	.	5,240	7	.	.	.
Oct-10-2007	5	.	.	4,400	NA	.	.	.
Oct-17-2007	9	.	.	2,990	16	.	.	.
Oct-24-2007	5	.	.	4,870	6	.	.	.
Oct-31-2007	7	.	.	4,870	10	.	.	.

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
Aug-07-2007	15	.	.	3,800	.	26.0	.	5.5
Aug-14-2007	18	.	.	4,040	.	28.2	.	6.7
Aug-21-2007	13	.	.	3,710	.	26.4	.	5.5
Aug-28-2007	10	.	.	4,350	.	28.4	.	7.3
Sep-04-2007	10	.	.	4,120	.	23.6	.	7.5
Sep-11-2007	10	.	.	4,040	.	19.8	.	7.8
Sep-18-2007	14	.	.	4,540	.	38.7	.	8.5
Sep-25-2007	7	.	.	4,370	.	38.9	.	7.3
Oct-02-2007	5	.	.	5,220	.	47.1	.	9.6
Oct-09-2007	6	.	.	4,910	.	40.7	.	9.5
Oct-16-2007	9	.	.	3,870	.	25.2	.	7.3
Oct-23-2007	5	.	.	3,950	.	26.1	.	7.3
Oct-30-2007	8	.	.	4,740	.	43.0	.	P

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
Aug-02-2007	17	26.6	7.7	3,770	14	26.1	5.9
Aug-09-2007	15	24.2	8.2	3,470	27	21.9	5.1
Aug-16-2007	20	25.6	8.9	4,190	19	29.4	7.0
Aug-23-2007	12	27.0	8.4	3,820	18	21.5	6.6
Aug-30-2007	11	27.5	7.8	3,760	15	24.8	5.8
Sep-06-2007	12	23.5	7.7	4,440	30	20.9	7.6
Sep-13-2007	13	22.1	7.6	4,040	22	18.3	7.1
Sep-20-2007	17	17.5	7.7	4,040	29	14.3	8.2
Sep-27-2007	12	21.2	8.4	4,120	59	34.2	6.5
Oct-04-2007	11	19.3	8.2	3,690	46	24.0	6.0
Oct-11-2007	13	17.5	7.8	3,650	45	20.4	5.7
Oct-18-2007	18	17.8	8.0	3,310	44	12.7	5.4
Oct-25-2007	14	16.9	7.1	2,940	36	9.5	4.4

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
Aug-02-2007	4	24.8	7.9	1,210	.	1.3	1.3
Aug-09-2007	1	25.5	8.3	1,110	.	0.9	1.5
Aug-16-2007	0	24.7	7.2	2,260	.	0.7	2.1
Aug-23-2007	1	27.2	8.5	1,350	.	0.8	1.0
Aug-30-2007	5	25.9	8.8	1,210	.	0.9	0.9
Sep-06-2007	21	21.4	8.3	799	.	0.6	0.4
Sep-13-2007	16	20.7	8.1	714	.	0.4	0.4
Sep-20-2007	7	16.1	8.4	844	.	NA	NA
Sep-27-2007	53	20.3	7.7	939	.	0.5	0.6
Oct-04-2007	60	17.9	7.6	935	.	<0.4	0.5
Oct-11-2007	70	16.2	7.8	971	.	0.4	0.6
Oct-18-2007	139	16.6	7.7	875	.	0.4	0.6
Oct-25-2007	151	17.2	7.5	1,080	.	<0.4	0.7

** 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
Aug-02-2007	21	25.4	7.8	2,720	14.2	4.0
Aug-09-2007	16	24.3	8.2	3,590	17.7	5.2
Aug-16-2007	20	25.1	8.7	3,850	24.0	6.5
Aug-23-2007	13	26.0	8.1	2,780	12.1	4.0
Aug-30-2007	16	26.6	8.2	2,900	17.7	4.3
Sep-06-2007	33	21.6	8.2	1,900	6.5	2.4
Sep-13-2007	29	21.2	8.2	1,810	5.3	2.4
Sep-20-2007	24	16.7	8.4	2,240	6.5	1.4
Sep-27-2007	65	20.2	6.4	1,540	8.4	1.6
Oct-04-2007	71	18.2	7.5	1,360	3.3	1.3
Oct-11-2007	83	16.4	7.8	1,450	3.5	1.4
Oct-18-2007	157	16.7	7.7	1,230	2.2	1.1
Oct-25-2007	165	17.5	7.4	1,240	1.0	1.0

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
Aug-03-2007	.	8.1	3,120	30	16.3	5.0
Aug-07-2007	.	8.2	4,040	13	20.9	6.8
Aug-14-2007	.	8.7	4,100	26	23.7	7.5
Aug-22-2007	.	8.6	2,600	30	11.6	3.9
Aug-28-2007	.	8.6	2,270	35	9.1	3.1
Sep-06-2007	.	8.4	1,930	57	6.3	2.6
Sep-11-2007	.	8.7	2,370	31	8.3	3.5
Sep-18-2007	.	8.6	2,090	45	4.9	3.4
Sep-26-2007	.	7.9	1,810	33	9.8	2.2
Oct-02-2007	.	8.0	1,400	20	3.4	1.6
Oct-10-2007	.	7.4	1,460	28	3.2	1.5
Oct-16-2007	.	7.7	1,250	14	2.3	1.2
Oct-23-2007	.	7.8	1,230	16	1.2	1.1

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
Aug-02-2007	70	24.8	7.7	1,220	0.6	0.5
Aug-09-2007	123	21.8	7.9	914	0.6	0.3
Aug-16-2007	98	24.8	7.2	898	0.4	0.4
Aug-23-2007	78	24.7	7.4	1,170	0.5	0.4
Aug-30-2007	49	25.9	7.9	1,270	<0.4	0.5
Sep-06-2007	49	20.7	8.0	1,360	0.5	0.5
Sep-13-2007	39	19.4	8.0	1,620	<0.4	0.6
Sep-20-2007	75	14.9	7.9	1,320	0.5	0.5
Sep-27-2007	99	19.9	7.6	1,250	0.5	0.5
Oct-04-2007	63	18.1	7.4	1,570	0.6	0.7
Oct-11-2007	82	15.9	7.5	1,290	0.5	0.6
Oct-18-2007	138	16.4	7.8	1,190	0.7	0.6
Oct-25-2007	137	16.3	7.7	1,140	0.5	0.7

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
Aug-01-2007	NA	.	.	408	0.8	0.2
Aug-08-2007	15	.	.	482	0.9	0.3
Aug-15-2007	45	.	.	537	0.7	0.3
Aug-22-2007	45	.	.	560	0.7	0.2
Aug-29-2007	45	.	.	566	0.8	0.3
Sep-05-2007	70	.	.	754	0.9	0.2
Sep-12-2007	80	.	.	704	0.5	0.3
Sep-19-2007	140	.	.	715	0.6	0.2
Sep-26-2007	150	.	.	531	0.8	0.2
Oct-03-2007	125	.	.	560	0.5	0.2
Oct-10-2007	90	.	.	596	0.6	0.2
Oct-17-2007	25	.	.	682	0.8	0.3
Oct-24-2007	35	.	.	658	0.4	0.3
Oct-31-2007	35	.	.	523	0.5	P

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
Aug-01-2007	NA	.	.	433	1.3	0.2
Aug-08-2007	10	.	.	502	0.8	0.2
Aug-15-2007	10	.	.	539	0.7	0.2
Aug-22-2007	20	.	.	586	0.8	0.2
Aug-29-2007	30	.	.	546	0.9	0.3
Sep-05-2007	60	.	.	711	1.1	0.3
Sep-12-2007	100	.	.	661	0.5	0.2
Sep-19-2007	125	.	.	625	0.7	0.2
Sep-26-2007	155	.	.	546	0.7	0.2
Oct-03-2007	125	.	.	512	0.6	0.2
Oct-10-2007	125	.	.	547	0.6	0.2
Oct-17-2007	125	.	.	561	<0.4	0.2
Oct-24-2007	60	.	.	566	<0.4	0.3
Oct-31-2007	75	.	.	516	<0.4	P

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
Aug-01-2007	NA	.	.	1,010	1.6	1.1
Aug-08-2007	NA	.	.	1,000	1.1	1.0
Aug-15-2007	NA	.	.	1,190	1.2	1.2
Aug-22-2007	NA	.	.	660	0.9	0.3
Aug-29-2007	NA	.	.	984	1.4	0.7
Sep-05-2007	50	.	.	895	1.1	0.4
Sep-12-2007	105	.	.	815	0.6	0.4
Sep-19-2007	160	.	.	768	0.8	0.3
Sep-26-2007	140	.	.	667	0.7	0.2
Oct-03-2007	95	.	.	670	0.6	0.3
Oct-10-2007	70	.	.	601	0.7	0.2
Oct-17-2007	30	.	.	784	0.8	0.5
Oct-24-2007	60	.	.	733	0.7	0.4
Oct-31-2007	30	.	.	590	0.5	P

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
Aug-01-2007	NA	.	.	857	1.4	1.0
Aug-08-2007	55	.	.	965	1.3	1.1
Aug-15-2007	55	.	.	832	0.8	0.9
Aug-22-2007	73	.	.	725	1.0	0.5
Aug-29-2007	65	.	.	679	0.8	0.3
Sep-05-2007	NA	.	.	811	1.1	0.4
Sep-12-2007	NA	.	.	877	0.6	0.4
Sep-19-2007	NA	.	.	919	0.7	0.4
Sep-26-2007	NA	.	.	838	0.7	0.4
Oct-03-2007	NA	.	.	750	0.6	0.4
Oct-10-2007	NA	.	.	783	0.7	0.5
Oct-17-2007	NA	.	.	798	0.6	0.6
Oct-24-2007	NA	.	.	1,010	0.5	0.9
Oct-31-2007	NA	.	.	1,000	0.5	P

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
Aug-01-2007	.	.	.	517	0.9	0.2
Aug-08-2007	.	.	.	483	0.9	0.2
Aug-15-2007	.	.	.	517	0.8	0.3
Aug-22-2007	.	.	.	569	0.7	0.2
Aug-29-2007	.	.	.	603	0.9	0.2
Sep-05-2007	.	.	.	682	0.9	0.2
Sep-12-2007	.	.	.	659	0.4	0.2
Sep-19-2007	.	.	.	681	0.9	0.3
Sep-26-2007	.	.	.	562	0.6	0.1
Oct-03-2007	.	.	.	635	0.9	0.3
Oct-10-2007	.	.	.	564	0.6	0.2
Oct-17-2007	.	.	.	591	0.5	0.2
Oct-24-2007	.	.	.	601	0.5	0.3
Oct-31-2007	.	.	.	519	<0.4	P

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
Aug-02-2007	110	24.9	8.2	1,010	0.5	0.4
Aug-09-2007	154	24.3	7.6	746	0.6	0.3
Aug-16-2007	117	23.4	8.3	1,190	<0.4	0.5
Aug-23-2007	103	26.7	7.4	1,320	0.5	0.5
Aug-30-2007	86	27.3	7.0	1,290	<0.4	0.4
Sep-06-2007	66	21.8	6.8	1,430	0.4	0.5
Sep-13-2007	52	21.7	7.8	2,180	0.4	0.7
Sep-20-2007	79	16.1	9.7	1,460	<0.4	0.5
Sep-27-2007	111	20.4	8.2	1,190	<0.4	0.6
Oct-04-2007	79	17.4	7.9	1,760	<0.4	0.7
Oct-11-2007	86	15.7	6.6	1,730	0.5	0.7
Oct-18-2007	167	16.7	6.6	1,240	0.7	0.6
Oct-25-2007	168	16.3	6.9	1,390	0.4	0.7

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
Aug-07-2007	.	.	.	NA	2.3	1.2
Aug-14-2007	.	.	.	NA	2.8	1.4
Aug-21-2007	.	.	.	NA	2.6	1.3
Aug-28-2007	.	.	.	NA	1.6	1.1
Sep-18-2007	.	.	.	NA	1.3	1.1
Sep-26-2007	.	.	.	NA	3.6	1.3
Oct-02-2007	.	.	.	NA	1.4	0.9
Oct-16-2007	.	.	.	NA	1.3	0.9
Oct-23-2007	.	.	.	NA	1.1	0.9

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
Aug-02-2007	387	25.0	8.0	1,230	1.9	0.8
Aug-09-2007	438	24.4	7.8	1,060	1.6	0.7
Aug-16-2007	352	22.7	8.1	1,220	1.4	0.8
Aug-23-2007	428	26.4	7.6	1,040	1.1	0.5
Aug-30-2007	383	26.5	7.6	1,030	0.8	0.5
Sep-06-2007	340	22.0	7.6	935	0.6	0.4
Sep-13-2007	269	21.5	7.8	1,130	0.7	0.6
Sep-20-2007	305	18.2	7.9	1,070	0.9	0.6
Sep-27-2007	285	20.6	7.7	1,180	1.9	0.7
Oct-04-2007	387	18.4	7.8	1,200	1.0	0.6
Oct-11-2007	364	17.0	7.5	1,290	1.0	0.7
Oct-18-2007	547	16.9	7.7	993	1.1	0.6
Oct-25-2007	694	17.0	7.5	1,030	0.6	0.6

Table 20. Summary of fathead minnow (*Pimephales promelas*) larvae survival in 7-day tests using water samples collected from November 2006 to October 2007. 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	%	%	%	%	%	%
Nov-2007	95	98	85	100	100	98
Dec-2007	98	100	85*	93	98	98
Jan-2007	100	100	90	93	98	100
Feb-2007	98	90	95	88	98	100
Mar-2007	98	80*	95	93	98	98
Apr-2007	100	98	100	95	95	100
May-2007	95	95	98	95	100	95
Jun-2007	98	93	90	90	93	90
Jul-2007	100	98	98	100	100	100
Aug-2007	93	100	100	95	93	100
Sep-2007	93	90	88	93	93	100
Oct-2008	88	98	93	95	98	100

Table 21. Summary of fathead minnow (*Pimephales promelas*) larvae growth in 7-day tests using water samples collected from November 2006 to October 2007. 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
Nov-2007	0.30	0.28*	0.30	0.33	0.33	0.32
Dec-2007	0.35	0.40	0.41	0.45	0.32	0.31
Jan-2007	0.30	0.35	0.37	0.34	0.31	0.31
Feb-2007	0.45	0.41	0.43	0.33	0.37	0.38
Mar-2007	0.36	0.26*	0.36	0.33	0.32	0.31
Apr-2007	0.38	0.33	0.31	0.32	0.34	0.33
May-2007	0.41	0.43	0.40	0.36	0.45	0.41
Jun-2007	0.36	0.33	0.33	0.31	0.31	0.33
Jul-2007	0.36	0.32	0.26*	0.36	0.36	0.33
Aug-2007	0.30	0.29	0.32	0.33	0.27	0.26
Sep-2007	0.26	0.24	0.25	0.26	0.27	0.25
Oct-2008	0.32	0.36	0.34	0.41	0.36	0.34

Table 22. Summary of *Daphnia magna* survival in 7-day tests using water samples collected from November 2006 to October 2007. 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	%	%	%	%	%	%
Nov-2007	90	100	100	90	90	100
Dec-2007	90	70	100	90	100	90
Jan-2007	90	90	80	90	90	80
Feb-2007	100	80	90	90	100	90
Mar-2007	100	80	90	100	80	100
Apr-2007	100	90	90	100	90	100
May-2007	90	0*	90	90	100	100
Jun-2007	60*	100	80	100	100	100
Jul-2007	80	80	80	90	80	100
Aug-2007	100	70	90	90	80	100
Sep-2007	100	100	100	100	100	80
Oct-2008	90	80	100	90	90	80

Table 23. Summary of *Daphnia magna* reproduction in 7-day tests using water samples collected from November 2006 to October 2007. 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
Nov-2007	36.6	49.6	47.0	47.9	38.3	46.2
Dec-2007	28.4	22.5	29.6	31.5	27.8	22.3
Jan-2007	20.5	27.3	23.2	26.0	28.5	21.4
Feb-2007	31.7	32.9	39.4	31.6	28.6	30.5
Mar-2007	35.2	27.1	32.9	28.2*	36.8	30.2
Apr-2007	22.7	21.1	29.0	21.2	21.1	26.2
May-2007	38.4	16.0*	33.0	33.3	36.5	30.0
Jun-2007	18.3*	34.9	34.9	32.6	28.2	27.2
Jul-2007	43.1	32.5	34.6	20.9	20.8	36.3
Aug-2007	29.8	26.3	40.7	33.9	25.9	26.3
Sep-2007	19.2*	32.0	31.0	23.8	29.3	19.6
Oct-2008	35.8	31.1	34.4	27.5	24.3	26.2

Table 24. Summary of *Selenastrum capricornutum* growth in 4-day tests using water samples collected from November 2006 to October 2007. 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
Nov-2007	17.6	26.2	23.3	24.7	17.7	17.5
Dec-2007	13.4	13.9	12.8	5.4*	7.5	17.2
Jan-2007	8.9	20.3	18.5	21.0	11.4	16.9
Feb-2007	7.9*	22.9	17.9	31.8	13.4	15.7
Mar-2007	12.0	11.0	8.8*	9.2*	12.4	14.3
Apr-2007	4.7*	19.0	8.8	5.2*	10.0	14.9
May-2007	12.2	15.8	2.8*	10.0*	14.2	14.9
Jun-2007	12.3	15.3	13.6	14.5	11.2	16.0
Jul-2007	10.4	15.4	11.2	15.5	9.4	13.4
Aug-2007	12.0	15.9	12.6	13.7	9.9	13.7
Sep-2007	11.8	8.9	11.5	13.5	9.2††††	3.8†††† ‡
Oct-2008	12.0	13.9	14.1	14.8	10.8	13.8 ‡

Table 25. Summary of selenium concentrations in grab water samples collected at study stations for use in laboratory toxicity tests, August 2007 to October 2007.

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
Aug-13-2007	27	<0.4	21	<0.4	<0.4
Aug-15-2007	27	0.5	23	<0.4	<0.4
Aug-17-2007	24	0.6	25	<0.4	<0.4
Sep-10-2007	19	<0.4	8.7	<0.4	<0.4
Sep-12-2007	16	<0.4	5.7	<0.4	<0.4
Sep-14-2007	16	<0.4	6.4	<0.4	<0.4
Sep-17-2007	13	<0.4	4.8	<0.4	<0.4
Oct-08-2007	23	<0.4	3.1	<0.4	<0.4
Oct-10-2007	20	<0.4	3.1	<0.4	<0.4
Oct-12-2007	19	<0.4	2.7	<0.4	<0.4

Table 26. Summary of total suspended solids concentrations in grab water samples collected at study stations for use in laboratory toxicity tests, August 2007 to October 2007.

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
Aug-16-2007	7	8	27	94	18
Aug-18-2007	21	5	23	76	24
Aug-20-2007	19	17	32	115	18
Sep-10-2007	40	21	29	74	7
Sep-12-2007	12	78	46	54	10
Sep-14-2007	18	39	38	55	9
Sep-17-2007	19	41	41	120	8
Oct-08-2007	25	13	25	48	3
Oct-10-2007	26	36	36	42	6
Oct-12-2007	28	25	33	86	9

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.
L	Result may be biased low. Sample was not preserved in the field
†	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