

# GRASSLAND BYPASS PROJECT

## MONTHLY DATA REPORT

**September 2008**

January 26, 2009

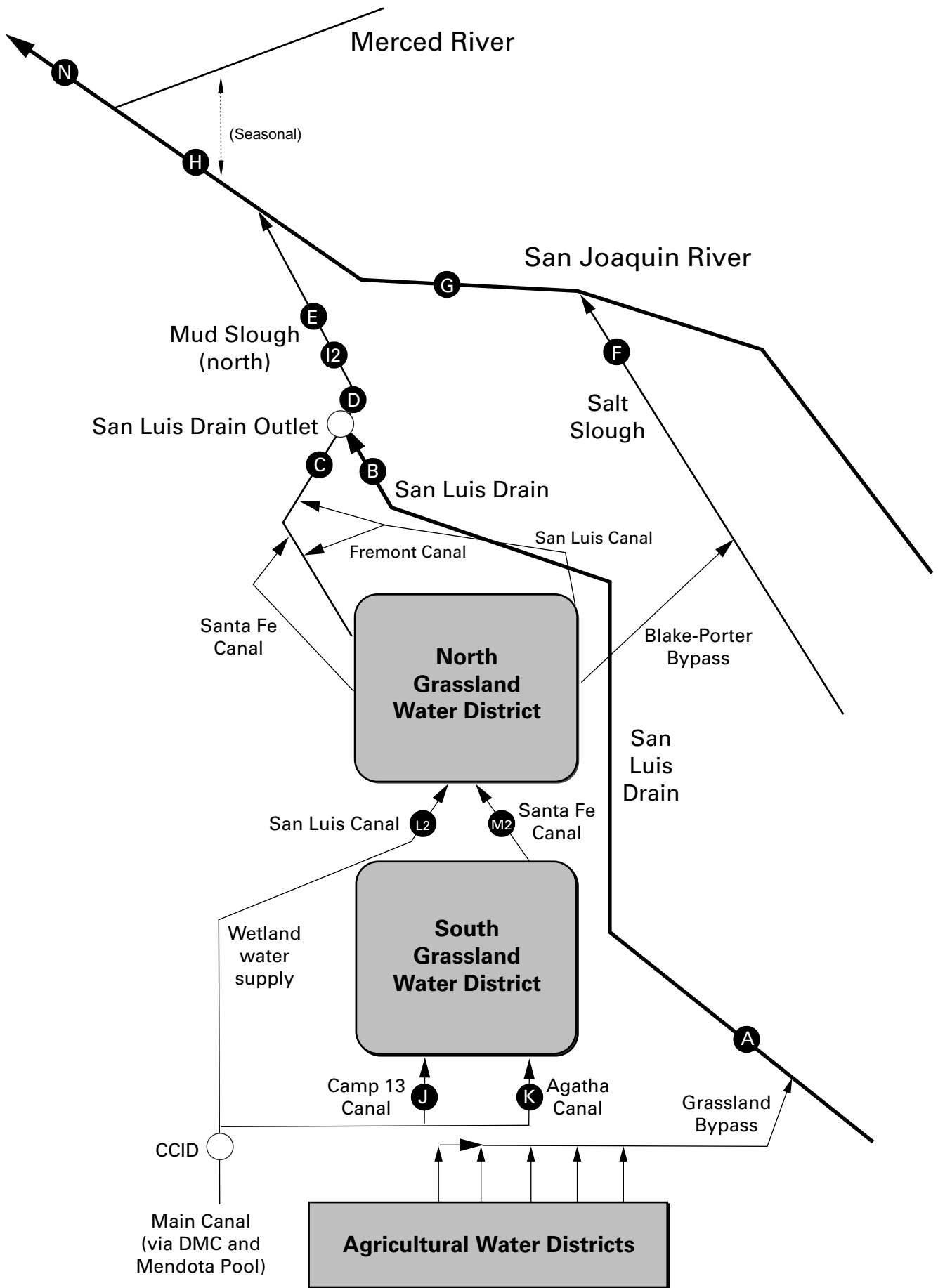
### **Preliminary Results**

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), September 2008.

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>
Sep-01-2008	19	2,520
Sep-02-2008	22	2,630
Sep-03-2008	17	2,850
Sep-04-2008	14	3,100
Sep-05-2008	12	3,050
Sep-06-2008	11	3,490
Sep-07-2008	12	3,630
Sep-08-2008	11	3,370
Sep-09-2008	10	3,730
Sep-10-2008	10	4,080
Sep-11-2008	7	4,150
Sep-12-2008	9	4,170
Sep-13-2008	7	4,430
Sep-14-2008	4	4,970
Sep-15-2008	4	5,350
Sep-16-2008	5	5,160
Sep-17-2008	4	5,330
Sep-18-2008	15	4,670
Sep-19-2008	11	4,160
Sep-20-2008	10	3,840
Sep-21-2008	11	3,580
Sep-22-2008	11	3,650
Sep-23-2008	9	3,590
Sep-24-2008	8	3,650
Sep-25-2008	9	3,880
Sep-26-2008	9	3,920
Sep-27-2008	9	3,980
Sep-28-2008	9	4,140
Sep-29-2008	10	4,130
Sep-30-2008	10	3,950
.	.	.
Mean	10	3,910

Table 2a. Continuous water monitoring at Stations B and B2 (San Luis Drain Terminus), September 2008.

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
Sep-01-2008	16	23.9	6.6	4,530	26.2	2.3
Sep-02-2008	18	22.8	6.3	4,580	25.5	2.5
Sep-03-2008	20	24.1	5.5	4,430	26.4	2.9
Sep-04-2008	17	24.9	4.7	3,770	20.6	1.9
Sep-05-2008	12	25.1	4.8	3,480	13.4	0.9
Sep-06-2008	11	25.6	4.9	3,030	16.3	1.0
Sep-07-2008	10	26.5	4.3	3,090	14.5	0.8
Sep-08-2008	10	26.3	4.2	2,880	11.8	0.6
Sep-09-2008	9	25.6	4.5	2,720	13.9	0.7
Sep-10-2008	10	25.0	4.2	2,940	12.3	0.7
Sep-11-2008	9	25.1	4.5	2,810	12.7	0.6
Sep-12-2008	9	25.2	4.8	3,040	13.8	0.6
Sep-13-2008	8	24.7	5.0	3,250	14.3	0.6
Sep-14-2008	9	24.5	4.8	3,380	14.2	0.7
Sep-15-2008	7	24.7	4.8	3,350	16.2	0.6
Sep-16-2008	6	24.5	5.6	3,330	18.4	0.6
Sep-17-2008	6	24.3	6.0	3,630	18.2	0.6
Sep-18-2008	7	23.4	5.5	3,900	18.5	0.7
Sep-19-2008	13	23.4	5.9	3,750	16.5	1.2
Sep-20-2008	13	23.2	7.7	3,520	19.0	1.4
Sep-21-2008	12	23.2	8.3	4,020	19.3	1.2
Sep-22-2008	13	23.2	8.6	4,230	16.0	1.1
Sep-23-2008	14	22.7	9.9	4,410	19.3	1.5
Sep-24-2008	13	22.8	10.0	4,670	23.0	1.6
Sep-25-2008	12	23.5	9.4	4,980	24.1	1.5
Sep-26-2008	12	23.9	7.5	4,710	21.2	1.4
Sep-27-2008	12	24.6	7.1	4,070	15.6	1.0
Sep-28-2008	12	24.9	6.2	3,700	13.1	0.8
Sep-29-2008	13	24.7	6.1	3,450	12.5	0.9
Sep-30-2008	13	24.9	5.9	3,480	11.4	0.8
.	.	.	.	.	.	.
Mean	12	24.4	6.1	3,700	17.3	1.1
Total Acre-feet	690					
Total (lbs)						34

Load Limitation for September 2008 (lbs)	202
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◆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.

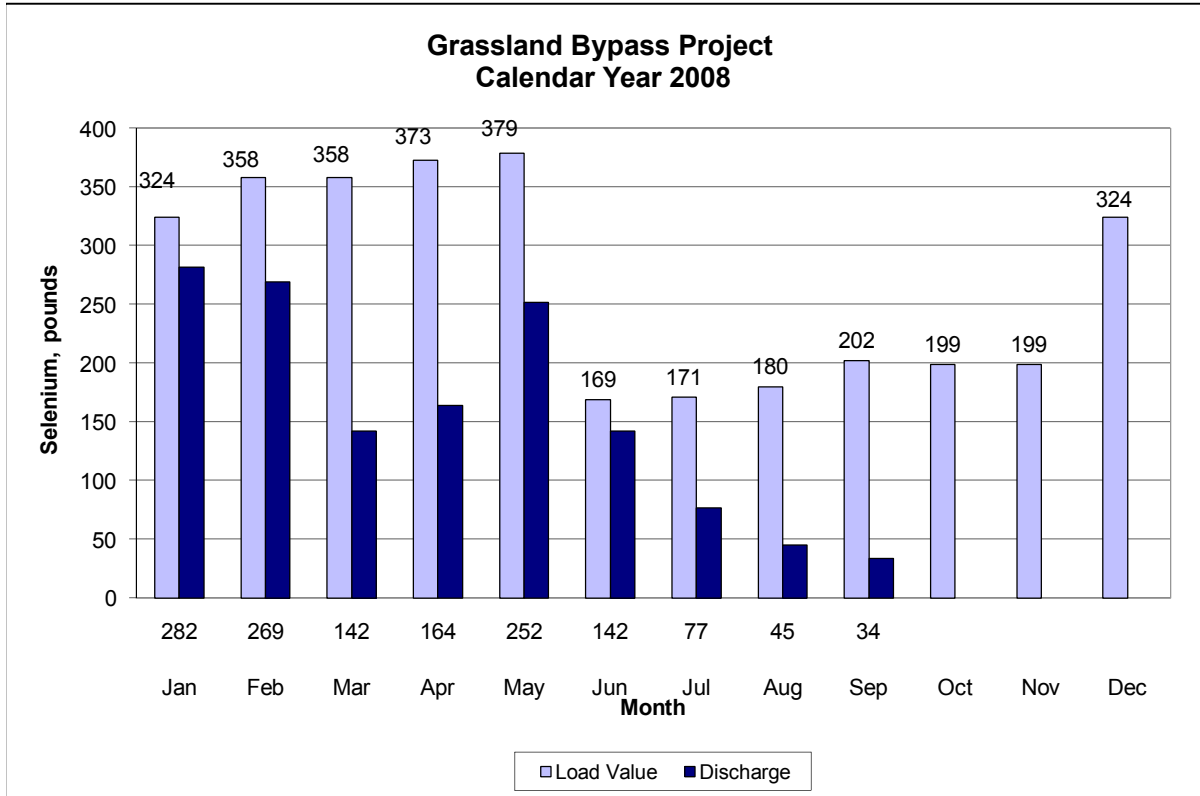


Table 3. Continuous water monitoring at Station D (Mud Slough North downstream of drainage discharges), September 2008.

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>
Sep-01-2008	17	22.7	4,020
Sep-02-2008	18	22.6	4,190
Sep-03-2008	20	23.4	4,030
Sep-04-2008	17	24.2	3,370
Sep-05-2008	13	24.8	3,050
Sep-06-2008	14	25.3	2,330
Sep-07-2008	13	26.1	2,260
Sep-08-2008	17	25.2	1,790
Sep-09-2008	18	24.5	1,590
Sep-10-2008	15	23.8	2,010
Sep-11-2008	13	23.9	2,080
Sep-12-2008	16	24.1	1,860
Sep-13-2008	16	23.2	1,850
Sep-14-2008	16	23.3	2,120
Sep-15-2008	17	23.5	1,700
Sep-16-2008	9	23.4	2,210
Sep-17-2008	9	23.0	2,520
Sep-18-2008	11	22.1	2,560
Sep-19-2008	20	22.2	2,690
Sep-20-2008	21	22.4	2,360
Sep-21-2008	19	22.2	2,630
Sep-22-2008	22	21.8	2,800
Sep-23-2008	27	21.6	2,500
Sep-24-2008	20	22.3	2,800
Sep-25-2008	23	22.9	2,690
Sep-26-2008	27	23.4	2,450
Sep-27-2008	25	23.9	2,260
Sep-28-2008	31	23.9	1,990
Sep-29-2008	38	24.0	1,760
Sep-30-2008	44	23.9	1,700
Mean	20	23.5	2,470

Table 4. Continuous water monitoring at Station F (Salt Slough at Highway 165), September 2008.

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
Sep-01-2008	50	21.4	1,380
Sep-02-2008	44	22.4	1,360
Sep-03-2008	34	24.1	1,380
Sep-04-2008	32	24.9	1,470
Sep-05-2008	28	24.9	NA
Sep-06-2008	31	25.7	NA
Sep-07-2008	37	26.5	NA
Sep-08-2008	35	25.2	1,510
Sep-09-2008	39	24.0	1,500
Sep-10-2008	45	22.8	1,320
Sep-11-2008	41	23.7	1,300
Sep-12-2008	38	24.4	1,370
Sep-13-2008	41	23.2	1,440
Sep-14-2008	42	23.0	1,420
Sep-15-2008	48	23.5	1,340
Sep-16-2008	46	23.5	1,290
Sep-17-2008	35	22.8	1,290
Sep-18-2008	33	21.6	1,360
Sep-19-2008	39	21.7	1,430
Sep-20-2008	56	21.8	1,380
Sep-21-2008	56	21.8	1,330
Sep-22-2008	62	21.4	1,310
Sep-23-2008	58	21.4	1,280
Sep-24-2008	56	22.3	1,350
Sep-25-2008	57	23.0	1,350
Sep-26-2008	55	23.4	1,340
Sep-27-2008	49	23.9	1,400
Sep-28-2008	51	23.9	1,500
Sep-29-2008	59	23.8	1,480
Sep-30-2008	54	23.7	1,400
.	.	.	.
Mean	45	23.3	1,380



Table 5. Continuous water monitoring at Station N (San Joaquin River at Crow's Landing), September 2008.

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
Sep-01-2008	438	22.3	930	0.7
Sep-02-2008	423	22.4	890	0.8
Sep-03-2008	416	23.6	930	0.9
Sep-04-2008	419	24.2	970	1.1
Sep-05-2008	409	24.5	970	1.3
Sep-06-2008	415	25.0	930	0.9
Sep-07-2008	401	25.4	900	1.2
Sep-08-2008	412	24.8	960	0.8
Sep-09-2008	419	24.1	910	0.7
Sep-10-2008	425	23.5	880	0.7
Sep-11-2008	415	23.7	880	0.7
Sep-12-2008	415	23.9	890	0.7
Sep-13-2008	404	23.3	890	0.6
Sep-14-2008	419	23.1	910	<0.4
Sep-15-2008	454	23.4	840	<0.4
Sep-16-2008	319	23.4	960	0.6
Sep-17-2008	256	22.6	1,200	<0.4
Sep-18-2008	238	21.6	1,270	0.4
Sep-19-2008	227	21.7	1,250	0.7
Sep-20-2008	225	21.8	1,240	0.8
Sep-21-2008	272	21.8	1,270	1.0
Sep-22-2008	298	21.6	1,080	0.9
Sep-23-2008	306	21.5	1,020	0.9
Sep-24-2008	296 e	22.2	1,050	1.9
Sep-25-2008	280	22.6	1,060	0.9
Sep-26-2008	266	23.0	1,130	0.9
Sep-27-2008	267	23.6	1,170	1.1
Sep-28-2008	252	23.6	1,220	1.1
Sep-29-2008	263	23.5	1,240	1.0
Sep-30-2008	278	23.4	1,160	0.9
Mean	344	23.2	1,030	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	.	.	.
Jul-02-2008	23	.	.	3,920	190	.	.	.
Jul-09-2008	18	.	.	3,850	218	.	.	.
Jul-16-2008	15	.	.	4,120	180	.	.	.
Jul-23-2008	21	.	.	3,510	175	.	.	.
Jul-30-2008	13	.	.	4,760	154	.	.	.
Aug-06-2008	16	.	.	3,690	171	.	.	.
Aug-13-2008	12	.	.	3,100	183	.	.	.
Aug-20-2008	10	.	.	3,800	166	.	.	.
Aug-27-2008	11	.	.	4,210	197	.	.	.
Sep-03-2008	17	.	.	3,660	105	.	.	.
Sep-10-2008	10	.	.	4,390	80	.	.	.
Sep-17-2008	4	.	.	5,920	32	.	.	.
Sep-24-2008	8	.	.	3,980	127	.	.	.

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
Jul-01-2008	19	.	.	3,990	.	31.7	.	6.4
Jul-08-2008	18	.	.	4,080	.	34.0	.	6.9
Jul-15-2008	13	.	.	3,770	.	25.6	.	6.6
Jul-22-2008	21	.	.	4,030	.	28.9	.	7.1
Jul-29-2008	13	.	.	4,360	.	37.8	.	8.0
Aug-05-2008	14	.	.	4,150	.	26.8	.	6.6
Aug-12-2008	10	.	.	3,300	.	19.4	.	4.9
Aug-19-2008	8	.	.	3,530	.	21.8	.	6.2
Aug-26-2008	11	.	.	4,110	.	30.9	.	6.3
Sep-02-2008	22	.	.	3,040	.	19.6	.	4.9
Sep-09-2008	10	.	.	3,650	.	22.2	.	5.1
Sep-16-2008	5	.	.	5,200	.	33.3	.	11.0
Sep-23-2008	9	.	.	4,340	.	26.2	.	8.2
Sep-30-2008	10	.	.	4,260	.	20.1	.	8.4

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
Jul-02-2008	19	25.1	8.5	3,820	81	24.6	6.4
Jul-10-2008	19	28.4	7.5	3,890	21	20.3	6.9
Jul-17-2008	18	25.7	7.1	3,570	34	16.5	6.0
Jul-24-2008	18	24.5	8.0	4,040	20	19.0	6.7
Jul-31-2008	16	25.3	7.6	4,080	18	27.9	6.5
Aug-07-2008	14	25.6	8.2	4,940	24	32.3	7.3
Aug-14-2008	10	26.9	7.9	3,920	25	19.7	6.3
Aug-21-2008	8	25.5	8.2	3,500	14	18.0	5.5
Aug-28-2008	10	25.2	7.3	4,300	28	25.8	6.4
Sep-04-2008	17	23.0	8.8	3,430	42	20.1	4.9
Sep-11-2008	9	22.8	8.4	2,930	25	12.2	4.8
Sep-18-2008	7	21.7	8.0	3,690	28	17.5	5.4
Sep-25-2008	12	22.1	8.1	4,710	33	22.5	9.4

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
Jul-02-2008	-1	24.9	8.2	3,430	.	<0.4	2.6
Jul-10-2008	0	26.0	8.0	3,440	.	<0.4	2.5
Jul-17-2008	-2	23.1	7.8	2,490	.	0.5	2.0
Jul-24-2008	0	21.7	8.4	2,670	.	0.6	1.8
Jul-31-2008	1	23.0	8.2	1,060	.	1.3	1.4
Aug-07-2008	4	22.9	8.2	4,010	.	0.7	3.5
Aug-14-2008	3	25.1	8.4	3,970	.	<0.4	3.0
Aug-21-2008	2	26.3	7.5	1,910	.	0.7	1.7
Aug-28-2008	8	24.0	8.5	1,050	.	1.0	0.8
Sep-04-2008	0	22.8	8.5	1,110	.	<0.4	0.7
Sep-11-2008	4	19.9	8.2	970	.	<0.4	0.5
Sep-18-2008	4	18.6	8.1	1,280	.	0.6	0.8
Sep-25-2008	11	20.6	7.1	1,170	.	2.5	0.8

++ 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
Jul-02-2008	18	25.2	8.7	4,050	23.2	5.9
Jul-10-2008	19	28.3	7.8	3,500	27.4	6.9
Jul-17-2008	16	25.3	8.2	3,420	15.2	5.5
Jul-24-2008	18	24.3	8.3	3,390	12.6	5.9
Jul-31-2008	17	23.7	8.1	2,940	19.3	5.5
Aug-07-2008	18	24.6	8.1	3,900	21.2	6.3
Aug-14-2008	13	16.5	8.4	4,390	20.2	6.7
Aug-21-2008	10	26.7	8.3	3,230	14.0	4.8
Aug-28-2008	18	24.1	6.2	2,460	11.6	3.8
Sep-04-2008	17	22.8	8.6	3,400	21.1	5.4
Sep-11-2008	13	21.5	8.1	2,170	7.6	2.9
Sep-18-2008	11	19.8	8.1	2,630	9.1	3.2
Sep-25-2008	23	21.1	7.7	2,750	9.5	4.6

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
Jul-01-2008	.	8.8	4,020	33	19.2	5.7
Jul-09-2008	.	8.8	4,340	33	27.7	7.1
Jul-18-2008	.	8.3	3,920	27	12.8	6.3
Jul-23-2008	.	8.8	3,650	32	10.5	6.7
Jul-29-2008	.	8.5	3,710	16	16.2	6.4
Aug-06-2008	.	8.5	5,110	16	32.2	8.8
Aug-11-2008	.	8.8	4,760	14	28.2	7.6
Aug-19-2008	.	8.4	3,350	13	14.6	5.2
Aug-25-2008	.	8.3	3,140	12	13.2	4.6
Sep-03-2008	.	8.3	4,180	13	24.8	6.8
Sep-08-2008	.	7.9	1,760	17	6.7	2.4
Sep-18-2008	.	8.8	2,580	11	8.7	3.6
Sep-22-2008	.	8.3	2,969	13	10.6	5.6
Sep-30-2008	.	7.9	1,745	14	3.1	2.1

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
Jul-02-2008	106	23.0	8.0	1,420	<0.4	0.6
Jul-10-2008	110	26.6	7.4	1,030	0.5	0.5
Jul-17-2008	108	23.4	7.7	1,127	0.4	0.5
Jul-24-2008	96	23.0	7.6	1,230	0.5	0.5
Jul-31-2008	84	23.1	7.6	1,280	0.5	0.5
Aug-07-2008	85	23.7	7.6	1,100	0.4	0.4
Aug-14-2008	61	24.9	7.6	1,190	<0.4	0.5
Aug-21-2008	49	26.3	7.9	1,320	<0.4	0.5
Aug-28-2008	42	23.0	7.7	1,360	<0.4	0.5
Sep-04-2008	32	21.0	7.9	1,590	<0.4	0.6
Sep-11-2008	41	20.1	7.9	1,230	<0.4	0.5
Sep-18-2008	33	18.1	8.1	1,480	0.6	0.6
Sep-25-2008	57	21.0	7.3	1,290	<0.4	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
Jul-02-2008	11	.	.	640	0.9	0.4
Jul-09-2008	11	.	.	480	0.8	0.3
Jul-16-2008	11	.	.	420	0.7	0.3
Jul-23-2008	11	.	.	540	1.2	0.4
Jul-30-2008	11	.	.	460	0.8	0.2
Aug-06-2008	11	.	.	500	0.6	0.2
Aug-13-2008	21	.	.	580	0.8	0.3
Aug-20-2008	21	.	.	610	0.4	0.3
Aug-27-2008	50	.	.	630	0.7	0.3
Sep-03-2008	70	.	.	710	0.7	0.4
Sep-10-2008	70	.	.	660	0.5	0.2
Sep-17-2008	130	.	.	630	0.8	0.3
Sep-24-2008	180	.	.	700	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 <sup>††</sup>	.	.	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	.	.	µS/cm	µg/L	mg/L
Jul-02-2008	13	.	.	840	1.6	0.7
Jul-09-2008	13	.	.	660	1.3	0.6
Jul-16-2008	13	.	.	500	1.1	0.5
Jul-23-2008	13	.	.	430	1.0	0.3
Jul-30-2008	13	.	.	500	0.9	0.3
Aug-06-2008	0	.	.	540	1.3	0.3
Aug-13-2008	0	.	.	1,090	1.7	1.6
Aug-20-2008	0	.	.	680	1.6	0.5
Aug-27-2008	0	.	.	1,960	5.5	2.7
Sep-03-2008	80	.	.	760	1.0	0.5
Sep-10-2008	90	.	.	700	0.7	0.3
Sep-17-2008	150	.	.	620	0.7	0.2
Sep-24-2008	150	.	.	690	0.6	0.2

Note: The peak in selenium is caused by no flow conditions at this site.

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
Jul-02-2008	NA	.	.	1,370	1.3	1.2
Jul-09-2008	NA	.	.	1,100	0.6	1.5
Jul-16-2008	NA	.	.	980	1.4	1.5
Jul-23-2008	NA	.	.	1,000	1.4	1.6
Jul-30-2008	NA	.	.	960	1.2	1.4
Aug-06-2008	NA	.	.	1,130	1.2	1.8
Aug-13-2008	NA	.	.	2,920	3.6	3.3
Aug-20-2008	NA	.	.	1,210	0.8	1.0
Aug-27-2008	NA	.	.	1,100	1.1	0.7
Sep-03-2008	NA	.	.	880	0.7	0.5
Sep-10-2008	NA	.	.	890	0.6	0.3
Sep-17-2008	NA	.	.	800	0.7	0.3
Sep-24-2008	NA	.	.	760	1.0	0.2

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
Jul-02-2008	NA	.	.	1,330	1.4	2.0
Jul-09-2008	NA	.	.	1,140	1.1	1.6
Jul-16-2008	NA	.	.	990	1.2	1.6
Jul-23-2008	NA	.	.	1,010	1.4	1.6
Jul-30-2008	NA	.	.	960	1.3	1.5
Aug-06-2008	NA	.	.	1,200	1.2	1.9
Aug-13-2008	NA	.	.	1,020	0.9	1.3
Aug-20-2008	NA	.	.	1,040	1.2	1.2
Aug-27-2008	NA	.	.	760	0.8	0.5
Sep-03-2008	NA	.	.	760	0.6	0.4
Sep-10-2008	NA	.	.	820	0.8	0.4
Sep-17-2008	NA	.	.	800	0.9	0.4
Sep-24-2008	NA	.	.	830	0.5	0.4

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
Jul-02-2008	.	.	.	620	0.7	0.3
Jul-09-2008	.	.	.	460	NA	0.3
Jul-16-2008	.	.	.	430	0.5	0.2
Jul-23-2008	.	.	.	430	1.0	0.2
Jul-30-2008	.	.	.	460	0.7	0.2
Aug-06-2008	.	.	.	470	0.6	0.2
Aug-13-2008	.	.	.	520	0.4	0.3
Aug-20-2008	.	.	.	590	0.5	0.2
Aug-27-2008	.	.	.	610	0.5	0.3
Sep-03-2008	.	.	.	690	0.7	0.3
Sep-10-2008	.	.	.	630	0.6	0.2
Sep-17-2008	.	.	.	620	0.6	0.2
Sep-24-2008	.	.	.	700	<0.4	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
Jul-02-2008	108	23.2	7.9	1,310	<0.4	0.5
Jul-10-2008	135	27.9	7.5	1,310	<0.4	0.4
Jul-17-2008	118	24.6	7.1	1,250	<0.4	0.5
Jul-24-2008	94	24.0	7.8	1,390	<0.4	0.5
Jul-31-2008	86	23.9	7.5	1,440	0.5	0.5
Aug-07-2008	96	24.2	7.9	1,190	<0.4	0.4
Aug-14-2008	83	26.2	7.9	1,110	<0.4	0.4
Aug-21-2008	59	24.4	8.0	1,440	<0.4	0.6
Aug-28-2008	47	24.3	7.5	1,540	<0.4	0.6
Sep-04-2008	38	23.2	8.0	2,400	<0.4	0.7
Sep-11-2008	45	21.4	7.8	1,590	<0.4	0.5
Sep-18-2008	33	20.4	7.1	2,120	<0.4	0.7
Sep-25-2008	58	20.5	7.8	1,270	<0.4	0.6

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
Jul-01-2008	.	.	.	1,940	2.4	1.3
Jul-08-2008	.	.	.	1,820	2.8	1.2
Jul-15-2008	.	.	.	1,940	3.9	1.6
Jul-22-2008	.	.	.	1,920	2.1	1.3
Jul-29-2008	.	.	.	1,750	2.2	1.2
Aug-06-2008	.	.	.	745	1.7	0.6
Aug-12-2008	.	.	.	1,740	2.1	1.0
Aug-19-2008	.	.	.	1,580	1.5	0.9
Aug-26-2008	.	.	.	1,750	1.6	0.9
Sep-09-2008	.	.	.	2,280	3.3	1.5
Sep-16-2008	.	.	.	2,050	0.9	1.2
Sep-24-2008	.	.	.	729	0.5	0.2
Sep-30-2008	.	.	.	1,910	1.3	1.5



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.

<b>PARAMETER</b>	<b>Flow</b>	<b>Temperature</b>	<b>pH</b>	<b>Specific Conductance</b>	<b>Selenium (total)</b>	<b>Boron</b>
<b>DATA SOURCE</b>	<b>usgs</b>	<b>CVRWQCB</b>	<b>CVRWQCB</b>	<b>CVRWQCB</b>	<b>CVRWQCB</b>	<b>CVRWQCB</b>
<b>UNITS</b>	<b>cfs</b>	<b>°C</b>	<b>.</b>	<b>µS/cm</b>	<b>µg/L</b>	<b>mg/L</b>
Jul-02-2008	286	22.5	8.2	1,460	1.4	0.8
Jul-10-2008	264	26.7	8.2	1,420	1.9	0.8
Jul-17-2008	309	24.3	7.9	1,210	1.4	0.7
Jul-24-2008	261	23.3	8.1	1,330	1.0	0.6
Jul-31-2008	427	23.8	7.9	870	1.0	0.5
Aug-07-2008	310	23.9	7.9	1,110	1.1	0.5
Aug-14-2008	403	25.7	7.8	900	0.7	0.4
Aug-21-2008	407	24.1	7.9	900	0.5	0.4
Aug-28-2008	394	24.0	8.0	950	0.6	0.4
Sep-04-2008	419	23.0	8.1	990	1.2	0.5
Sep-11-2008	415	22.1	7.8	890	<0.4	0.3
Sep-18-2008	238	19.8	7.2	1,300	0.8	0.5
Sep-25-2008	280	20.7	7.8	1,100	0.7	0.7

**Table 20. Summary of fathead minnow (*Pimephales promelas*) larvae survival in 7-day tests using water samples collected from October 2007 to September 2008. 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	%	%	%	%	%	%
Oct-2008	88	98	93	95	98	100
Nov-2008	95	95	100	100	100	98
Dec-2008	93	93	98	98	95	95
Jan-2008	100	100	95	98	100	100
Feb-2008	100	95	100	95	98	100
Mar-2008	93	95	100	100	73	100
Apr-2008	98	100	100	100	95	98
May-2008	98	95	98	95	98	100
Jun-2008	98	95	100	93	100	98
Jul-2008	90	98	100	90	100	95
Aug-2008	98	93	95	98	100	100
Sep-2009	90	95	93	98	95	98

**Table 21. Summary of fathead minnow (*Pimephales promelas*) larvae growth in 7-day tests using water samples collected from October 2007 to September 2008. 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
Oct-2008	0.32	0.36	0.34	0.41	0.36	0.34
Nov-2008	0.32*	0.32*	0.35	0.33	0.36	0.33
Dec-2008	0.31	0.33	0.32	0.32	0.32	0.32
Jan-2008	0.40	0.40	0.41	0.41	0.37	0.35
Feb-2008	0.46	0.43	0.41	0.41	0.38	0.33
Mar-2008	0.33	0.33	0.37	0.38	0.22	0.29
Apr-2008	0.31	0.39	0.31	0.24*	0.30	0.27
May-2008	0.31	0.31	0.29*	0.31	0.34	0.32
Jun-2008	0.31	0.33	0.36	0.31	0.31	0.31
Jul-2008	0.32	0.34	0.30	0.26	0.29	0.25
Aug-2008	0.36	0.33	0.37	0.33	0.34	0.32
Sep-2009	0.30	0.36	0.30	0.33	0.33	0.28

**Table 22. Summary of *Daphnia magna* survival in 7-day tests using water samples collected from October 2007 to September 2008. 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	%	%	%	%	%	%
Oct-2008	90	80	100	90	90	80
Nov-2008	100	100	100	100	100	100
Dec-2008	90	100	100	100	100	80
Jan-2008	70	100	90	100	100	90
Feb-2008	100	90	80	90	100	100
Mar-2008	100	100	90	100	100	90
Apr-2008	100	100	80	100	90	90
May-2008	80	70	80	100	90	90
Jun-2008	100	100	100	90	90	90
Jul-2008	100	80	100	100	90	100
Aug-2008	100	70	70	100	100	100
Sep-2009	90	90	100	90	100	100

**Table 23. Summary of *Daphnia magna* reproduction in 7-day tests using water samples collected from October 2007 to September 2008. 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
Oct-2008	35.8	31.1	34.4	27.5	24.3	26.2
Nov-2008	49.9	44.0	46.9	41.6	42.5	40.3
Dec-2008	32.2	24.4	32.2	28.7	30.7	23.0
Jan-2008	36.4	47.8	41.5	40.3	48.8	45.2
Feb-2008	35.6	33.6	33.4	35.8	27.7	28.3
Mar-2008	27.4	29.0	29.5	26.2	30.1	19.6
Apr-2008	31.4	31.1	27.5	24.8	33.6	25.8
May-2008	22.2	19.6	23.5	33.1	25.7	28.8
Jun-2008	23.4	21.0	29.3	23.6	26.6	26.0
Jul-2008	19.1	22.4	23.8	18.4	21.4	24.3
Aug-2008	26.5	15.3*	23.3	30.2	24.1	29.5
Sep-2009	27.3	24.9	36.6	22.3	27.3	23.8

**Table 24. Summary of *Selenastrum capricornutum* growth in 4-day tests using water samples collected from October 2007 to September 2008. 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
Oct-2008	12.0	13.9	14.1	14.8	10.8	13.8 ‡
Nov-2008	9.7*	17.3	21.4	19.1	13.2	15.1
Dec-2008	11.7	19.3	17.7	18.3	13.2	14.1
Jan-2008	15.8	16.3	22.6	19.9	16.3	16.1
Feb-2008	6.2	13.9	12.1	12.8	7.7††††	12.3
Mar-2008	18.1	14.2*	22.2	11.2*	20.5	24.9
Apr-2008	13.3*	16.7	22.4	11.9*	17.2	18.3
May-2008	17.1	30.5	22.3	14.2*	21.6	19.8
Jun-2008	15.9*	20.9	8.6*	22.7	20.5	20.1
Jul-2008	22.1	27.7	22.7	26.1	21.5	12.6
Aug-2008	16.8*	23.3	18.2*	19.5	20.9	20.8
Sep-2009	24.7	18.2*	10.0*	17.5*	26.5	17.1

**Table 25. Summary of selenium concentrations in grab water samples collected at study stations for use in laboratory toxicity tests, July 2008 to September 2008.**

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
Jul-14-2008	20	<0.4	21	<0.4	<0.4
Jul-16-2008	19	0.7	15	0.4	<0.4
Jul-18-2008	14	0.4	13	<0.4	<0.4
Aug-11-2008	25	0.5	28	<0.4	<0.4
Aug-13-2008	22	<0.4	23	<0.4	<0.4
Aug-15-2008	20	0.4	18	<0.4	<0.4
Sep-08-2008	11	<0.4	6.8	<0.4	<0.4
Sep-10-2008	11	<0.4	7.0	<0.4	<0.4
Sep-12-2008	13	<0.4	5.2	<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, July 2008 to September 2008.**

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
Jul-14-2008	40	6	26	114	43
Jul-16-2008	28	36	21	143	52
Jul-18-2008	80	10	34	126	45
Aug-11-2008	20	7	25	94	12
Aug-13-2008	21	8	18	88	19
Aug-15-2008	34	3	24	149	16
Sep-08-2008	18	17	16	38	11
Sep-10-2008	11	8	16	59	10
Sep-12-2008	17	59	64	53	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 <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