

GRASSLAND BYPASS PROJECT

MONTHLY DATA REPORT

November 2007

March 17, 2008

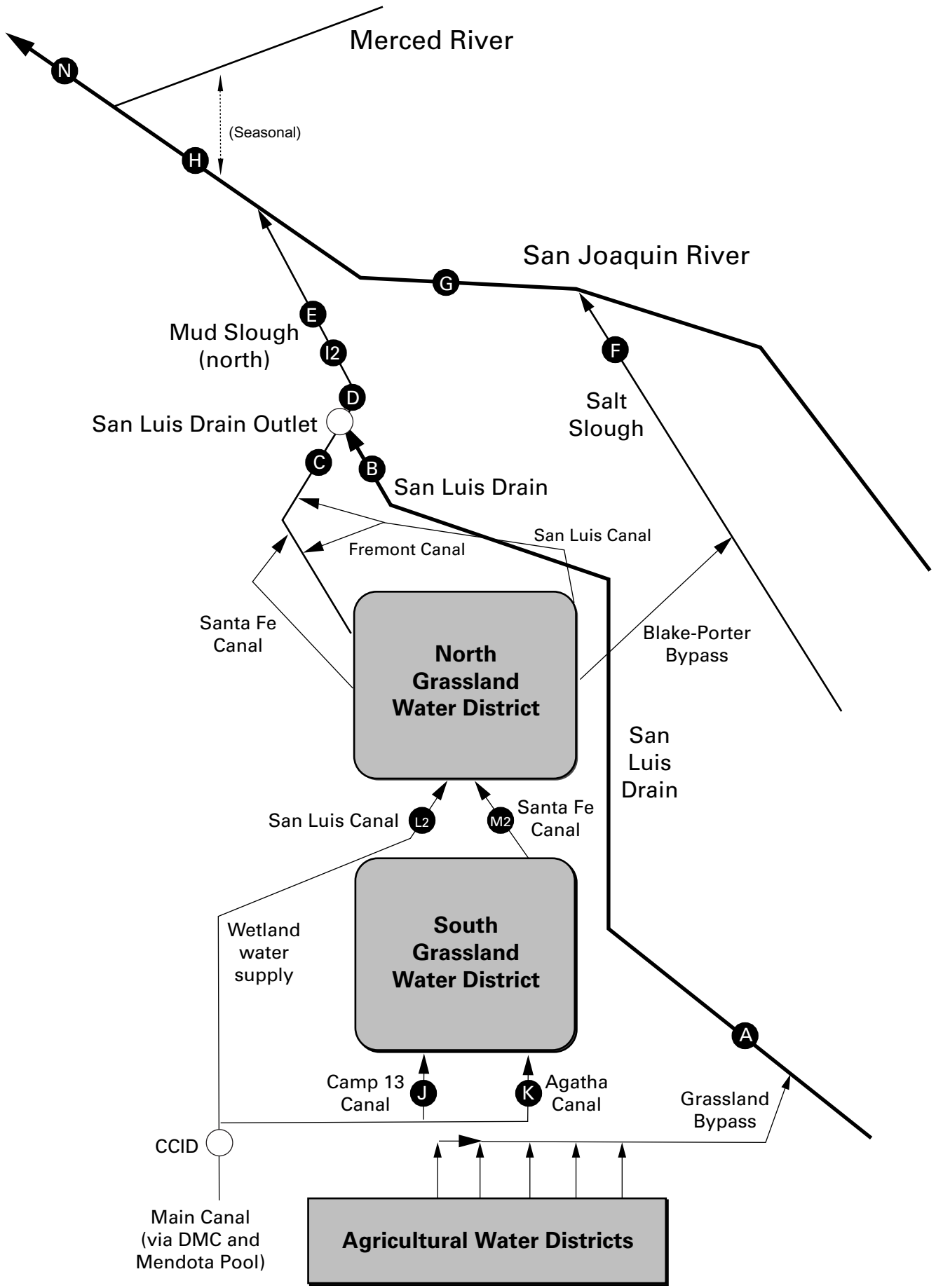
Preliminary Results

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), November 2007.

See Table 27 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Specific Conductance
DATA SOURCE	SLDMWA	SLDMWA
UNITS	cfs	µS/cm
Nov-01-2007	6	4,850
Nov-02-2007	6	4,830
Nov-03-2007	7	4,830
Nov-04-2007	8	4,940
Nov-05-2007	10	5,540
Nov-06-2007	10	5,360
Nov-07-2007	11	5,200
Nov-08-2007	14	5,100
Nov-09-2007	18	5,000
Nov-10-2007	13	5,010
Nov-11-2007	14	4,810
Nov-12-2007	15	4,730
Nov-13-2007	9	4,340
Nov-14-2007	8	4,210
Nov-15-2007	8	4,300
Nov-16-2007	9	4,310
Nov-17-2007	9	4,230
Nov-18-2007	8	4,410
Nov-19-2007	8	4,830
Nov-20-2007	8	4,710
Nov-21-2007	9	4,890
Nov-22-2007	9	5,090
Nov-23-2007	14	4,960
Nov-24-2007	15	4,900
Nov-25-2007	14	4,680
Nov-26-2007	13	4,720
Nov-27-2007	9	4,720
Nov-28-2007	9	4,720
Nov-29-2007	10	4,800
Nov-30-2007	9	4,950
.	.	.
Mean	10.4	4,800

Table 2a. Continuous water monitoring at Stations B and B2 (San Luis Drain Terminus), November 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
Nov-01-2007	15	18.2	P	3,620	13.5	1.1
Nov-02-2007	15	17.8	P	3,590	18.8	1.5
Nov-03-2007	15	17.5	P	3,960	23.2	1.9
Nov-04-2007	15	17.2	P	4,050	27.8	2.3
Nov-05-2007	16	17.1	P	3,570	27.8	2.3
Nov-06-2007	18	17.0	P	3,400	23.7	2.3
Nov-07-2007	18	17.1	P	3,660	20.5	2.0
Nov-08-2007	18	17.0	P	3,670	22.2	2.2
Nov-09-2007	21	16.9	P	3,740	19.6	2.2
Nov-10-2007	23	16.7	P	3,820	22.0	2.7
Nov-11-2007	22	16.9	P	4,210	21.8	2.6
Nov-12-2007	20	15.5	P	4,360	27.7	3.0
Nov-13-2007	22	15.8	P	4,350	37.7	4.4
Nov-14-2007	20	16.3	P	4,260	55.1	5.9
Nov-15-2007	18	16.6	P	4,480	63.3	6.3
Nov-16-2007	16	16.9	P	4,240	51.4	4.4
Nov-17-2007	17	16.6	P	4,200	40.8	3.7
Nov-18-2007	17	16.5	P	4,130	44.9	4.2
Nov-19-2007	17	16.6	P	3,960	45.6	4.2
Nov-20-2007	16	15.4	P	3,770	37.3	3.3
Nov-21-2007	17	13.9	P	3,460	22.6	2.1
Nov-22-2007	17	13.1	P	3,530	20.3	1.9
Nov-23-2007	18	12.3	P	3,550	21.7	2.1
Nov-24-2007	20	11.7	P	3,500	19.8	2.2
Nov-25-2007	21	11.5	P	3,580	23.5	2.7
Nov-26-2007	21	11.5	P	3,960	29.8	3.4
Nov-27-2007	21	11.5	P	4,030	33.4	3.7
Nov-28-2007	19	11.0	P	4,300	42.2	4.3
Nov-29-2007	18	10.9	P	4,260	52.7	5.2
Nov-30-2007	17	10.8	P	4,250	60.2	5.7
.
Mean	18	15.1	P	3,920	32.4	3.2
Total Acre-feet	1,090					
Total (lbs)						96

Load Limitation for November 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.

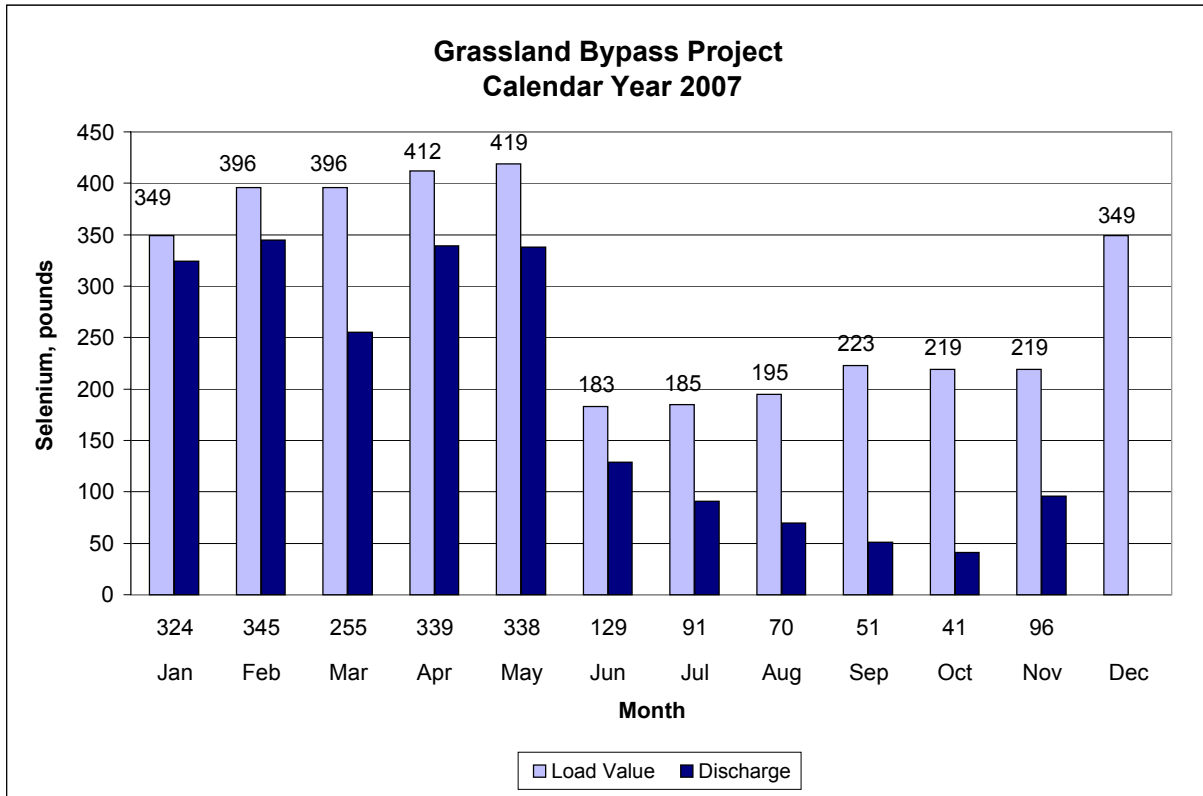


Table 3. Continuous water monitoring at Station D (Mud Slough North downstream of drainage discharges), November 2007.

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
Nov-01-2007	124	17.4	1,570
Nov-02-2007	121	17.2	1,610
Nov-03-2007	120	17.1	1,630
Nov-04-2007	118	16.7	1,680
Nov-05-2007	118	16.5	1,730
Nov-06-2007	121	16.5	1,700
Nov-07-2007	122	16.7	1,730
Nov-08-2007	122	16.5	1,780
Nov-09-2007	124	16.4	1,840
Nov-10-2007	131	16.1	1,830
Nov-11-2007	135	16.5	1,870
Nov-12-2007	139	14.8	1,830
Nov-13-2007	135	15.3	1,910
Nov-14-2007	130	16.1	1,900
Nov-15-2007	130	16.4	1,900
Nov-16-2007	133	16.6	1,800
Nov-17-2007	135	16.2	1,770
Nov-18-2007	139	16.2	1,750
Nov-19-2007	138	16.5	1,730
Nov-20-2007	134	14.9	1,740
Nov-21-2007	129	13.1	1,780
Nov-22-2007	127	12.3	1,780
Nov-23-2007	127	11.6	1,820
Nov-24-2007	126	11.0	1,890
Nov-25-2007	126	11.1	1,930
Nov-26-2007	126	11.2	1,960
Nov-27-2007	126	11.2	1,970
Nov-28-2007	124	10.6	1,940
Nov-29-2007	127	10.6	1,940
Nov-30-2007	125	10.5	1,950
Mean	128	14.7	1,810

Table 4. Continuous water monitoring at Station F (Salt Slough at Highway 165), November 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
Nov-01-2007	149	16.8	1,240
Nov-02-2007	124	16.6	1,330
Nov-03-2007	114	16.5	1,470
Nov-04-2007	109	16.0	1,530
Nov-05-2007	111	15.7	1,520
Nov-06-2007	115	15.7	1,450
Nov-07-2007	117	16.0	1,460
Nov-08-2007	113	15.8	1,480
Nov-09-2007	103	15.7	1,490
Nov-10-2007	104	15.5	1,570
Nov-11-2007	115	16.2	1,560
Nov-12-2007	115	14.6	1,560
Nov-13-2007	110	15.3	1,610
Nov-14-2007	115	15.8	1,560
Nov-15-2007	107	15.9	1,580
Nov-16-2007	103	16.0	1,650
Nov-17-2007	101	15.7	1,650
Nov-18-2007	108	15.6	1,620
Nov-19-2007	103	15.9	1,650
Nov-20-2007	104	14.6	1,600
Nov-21-2007	98	12.8	1,670
Nov-22-2007	92	12.2	1,710
Nov-23-2007	103	11.5	1,660
Nov-24-2007	104	10.8	1,620
Nov-25-2007	108	11.0	1,600
Nov-26-2007	117	11.2	1,490
Nov-27-2007	119	11.0	1,330
Nov-28-2007	124	10.8	1,330
Nov-29-2007	119	10.7	1,270
Nov-30-2007	106	10.7	1,420
.	.	.	.
Mean	111	14.3	1,520

Table 5. Continuous water monitoring at Station N (San Joaquin River at Crow's Landing), November 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
Nov-01-2007	1,340	16.1	480	0.6
Nov-02-2007	1,420	15.9	450	<0.4
Nov-03-2007	1,470	15.7	420	<0.4
Nov-04-2007	1,460	NA	430	0.7
Nov-05-2007	1,480	15.2	430	0.4
Nov-06-2007	1,510	15.1	440	0.4
Nov-07-2007	1,430	15.2	470	0.5
Nov-08-2007	1,320	15.2	510	0.9
Nov-09-2007	1,190	15.4	650	0.7
Nov-10-2007	1,030	15.3	710	0.7
Nov-11-2007	948	15.8	800	0.6
Nov-12-2007	915	14.8	900	0.8
Nov-13-2007	901	15.0	900	0.7
Nov-14-2007	860	15.7	880	0.9
Nov-15-2007	845	15.7	900	1.3
Nov-16-2007	853	15.9	900	1.7
Nov-17-2007	847	15.7	880	1.3
Nov-18-2007	862	15.7	890	1.1
Nov-19-2007	845	15.8	890	0.9
Nov-20-2007	822	14.8	900	1.0
Nov-21-2007	830	13.0	960	1.1
Nov-22-2007	832	12.3	910	0.9
Nov-23-2007	823	11.6	920	0.7
Nov-24-2007	803	11.0	930	0.5
Nov-25-2007	796	10.8	920	0.6
Nov-26-2007	794	10.9	960	0.7
Nov-27-2007	801	10.9	960	0.8
Nov-28-2007	804	10.6	950	1.0
Nov-29-2007	802	10.5	930	0.9
Nov-30-2007	820	10.5	930	1.0
Mean	1,020	14.0	770	0.8

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	.	.	.
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	.	.	.
Nov-07-2007	11	.	.	5,160	20	.	.	.
Nov-14-2007	8	.	.	4,150	19	.	.	.
Nov-20-2007	8	.	.	4,640	32	.	.	.
Nov-28-2007	9	.	.	4,830	12	.	.	.

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
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
Nov-06-2007	10	.	.	4,930	.	45.5	.	P
Nov-13-2007	9	.	.	4,530	.	60.6	.	P
Nov-19-2007	8	.	.	4,460	.	44.6	.	P
Nov-26-2007	13	.	.	4,970	.	77.9	.	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
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
Nov-01-2007	15	16.8	7.0	3,660	39	14.7	P
Nov-08-2007	18	16.2	6.8	3,770	36	20.6	P
Nov-15-2007	18	15.9	8.2	4,490	34	61.3	P
Nov-20-2007	16	15.3	7.7	3,780	52	37.0	P
Nov-29-2007	18	10.1	8.0	4,370	37	58.4	P

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

See Table 27 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Temperature	pH	Specific Conductance	.	Selenium (total)	Boron
DATA SOURCE	calculated **	CVRWQCB	CVRWQCB	CVRWQCB	.	CVRWQCB	CVRWQCB
UNITS	cfs	°C	.	µS/cm	.	µg/L	mg/L
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
Nov-01-2007	109	16.0	7.5	1,230	.	<0.4	P
Nov-08-2007	104	15.4	7.5	1,310	.	<0.4	P
Nov-15-2007	112	15.3	7.8	1,360	.	0.6	P
Nov-20-2007	118	15.0	7.7	1,380	.	<0.4	P
Nov-29-2007	109	9.6	7.9	1,450	.	<0.4	P

** Calculated flow value. Flow at Station C = flow at Station D - flow at Station B.

Table 9. Weekly water quality monitoring at Station D (Mud Slough North downstream of drainage discharges).

See Table 27 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Temperature	pH	Specific Conductance	Selenium (total)	Boron
DATA SOURCE	USGS	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	°C	.	µS/cm	µg/L	mg/L
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
Nov-01-2007	124	16.3	7.4	1,590	1.9	P
Nov-08-2007	122	15.6	7.3	1,720	3.4	P
Nov-15-2007	130	15.3	7.8	1,900	9.3	P
Nov-20-2007	134	15.1	7.7	1,740	5.0	P
Nov-29-2007	127	9.7	7.9	1,930	4.5	P

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

See Table 27 for explanation of footnotes and agency abbreviations.

PARAMETER		pH	Specific Conductance	Turbidity	Selenium	Boron
DATA SOURCE		USBR	USBR	USBR	USBR	USBR
UNITS		.	µS/cm	NTU	µg/L	mg/L
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
Nov-02-2007	.	7.6	1,680	18	2.2	1.6
Nov-09-2007	.	7.7	1,890	20	3.3	1.9
Nov-21-2007	.	7.8	1,830	22	4.6	1.8
Nov-27-2007	.	8.1	2,040	16	4.5	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
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
Nov-01-2007	149	15.5	7.7	1,200	0.6	P
Nov-08-2007	113	14.6	7.7	1,450	<0.4	P
Nov-15-2007	107	14.5	7.8	1,740	0.5	P
Nov-20-2007	104	14.1	7.8	1,580	0.5	P
Nov-29-2007	119	9.4	7.8	1,420	0.4	P

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

See Table 27 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	.	.	Specific Conductance	Selenium (total)	Boron
DATA SOURCE	SLDMWA ^{††}	.	.	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	.	.	µS/cm	µg/L	mg/L
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
Nov-07-2007	35	.	.	610	0.7	P
Nov-14-2007	35	.	.	560	0.5	P
Nov-20-2007	35	.	.	570	0.9	P
Nov-28-2007	20	.	.	640	0.9	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
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
Nov-07-2007	75	.	.	560	0.9	P
Nov-14-2007	75	.	.	610	0.8	P
Nov-20-2007	75	.	.	570	0.8	P
Nov-28-2007	75	.	.	730	1.4	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
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
Nov-07-2007	30	.	.	750	0.8	P
Nov-14-2007	20	.	.	770	0.6	P
Nov-20-2007	0	.	.	1,160	1.2	P
Nov-28-2007	0	.	.	1,310	0.9	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
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
Nov-07-2007	NA	.	.	1,130	0.8	P
Nov-14-2007	NA	.	.	1,100	0.5	P
Nov-20-2007	NA	.	.	1,120	0.7	P
Nov-28-2007	NA	.	.	1,100	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
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
Nov-07-2007	.	.	.	530	0.5	P
Nov-14-2007	.	.	.	600	0.8	P
Nov-20-2007	.	.	.	580	0.8	P
Nov-28-2007	.	.	.	560	0.8	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
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
Nov-01-2007	166	15.3	6.8	1,380	<0.4	P
Nov-08-2007	137	15.0	6.6	1,650	0.4	P
Nov-15-2007	136	15.0	7.5	1,580	<0.4	P
Nov-20-2007	130	14.1	7.8	1,850	0.5	P
Nov-29-2007	146	9.7	8.0	1,610	<0.4	P

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

(Collected data intended for use with biological monitoring.)

See Table 27 for explanation of footnotes and agency abbreviations.

PARAMETER	.	.	.	Specific Conductance	Selenium (total)	Boron
DATA SOURCE	.	.	.	SLDMWA	SLDMWA	SLDMWA
UNITS	.	.	.	µS/cm	µg/L	mg/L
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
Nov-06-2007	.	.	.	NA	86.1	1.2
Nov-13-2007	.	.	.	NA	1.9	1.4
Nov-27-2007	.	.	.	NA	2.7	1.3

This value is outside the historic range of selenium measurements for this site (n=104, max = 15.1 ug/L, median = 3.5 ug/L). Sample could not be reanalyzed by the laboratory. There was no corresponding spike at any other sites. There were no controlled releases from the Newman Wasteway to the river in November 2008.

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
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
Nov-01-2007	1,340	15.5	7.4	480	<0.4	P
Nov-08-2007	1,320	14.7	7.3	510	0.5	P
Nov-15-2007	845	15.0	8.0	900	1.3	P
Nov-20-2007	822	14.5	7.7	920	1.3	P
Nov-29-2007	802	10.2	8.0	950	1.0	P

Table 20. Summary of fathead minnow (*Pimephales promelas*) larvae survival in 7-day tests using water samples collected from December 2006 to November 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	%	%	%	%	%	%
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
Nov-2008	95	95	100	100	100	98

Table 21. Summary of fathead minnow (*Pimephales promelas*) larvae growth in 7-day tests using water samples collected from December 2006 to November 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
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
Nov-2008	0.32*	0.32*	0.35	0.33	0.36	0.33

Table 22. Summary of *Daphnia magna* survival in 7-day tests using water samples collected from December 2006 to November 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	%	%	%	%	%	%
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
Nov-2008	100	100	100	100	100	100

Table 23. Summary of *Daphnia magna* reproduction in 7-day tests using water samples collected from December 2006 to November 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
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
Nov-2008	49.9	44.0	46.9	41.6	42.5	40.3

Table 24. Summary of *Selenastrum capricornutum* growth in 4-day tests using water samples collected from December 2006 to November 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
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 ‡
Nov-2008	9.7*	17.3	21.4	19.1	13.2	15.1

Table 25. Summary of selenium concentrations in grab water samples collected at study stations for use in laboratory toxicity tests, September 2007 to November 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
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
Nov-05-2007	29	<0.4	3.5	<0.4	<0.4
Nov-07-2007	23	<0.4	3.5	<0.4	<0.4
Nov-09-2007	19	<0.4	3.4	0.7	<0.4
Nov-12-2007	26	<0.4	3.1	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, September 2007 to November 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
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
Nov-05-2007	25	33	32	61	3
Nov-07-2007	20	32	29	72	5
Nov-09-2007	34	45	57	94	7
Nov-12-2007	28	24	26	38	1

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