

GRASSLAND BYPASS PROJECT

MONTHLY DATA REPORT

October 2006

January 29, 2007

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 2006.

See Table 27 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Specific Conductance
DATA SOURCE	SLDMWA	SLDMWA
UNITS	cfs	µS/cm
Oct-01-2006	19	4,660
Oct-02-2006	17	5,490
Oct-03-2006	13	5,290
Oct-04-2006	11	5,040
Oct-05-2006	12	5,260
Oct-06-2006	14	4,210
Oct-07-2006	13	4,220
Oct-08-2006	11	5,160
Oct-09-2006	11	5,010
Oct-10-2006	11	4,980
Oct-11-2006	17	5,310
Oct-12-2006	17	5,840
Oct-13-2006	19	5,830
Oct-14-2006	18	5,760
Oct-15-2006	17	5,300
Oct-16-2006	15	5,630
Oct-17-2006	16	5,980
Oct-18-2006	15	5,650
Oct-19-2006	13	5,820
Oct-20-2006	13	6,090
Oct-21-2006	13	6,050
Oct-22-2006	14	6,140
Oct-23-2006	14	6,260
Oct-24-2006	15	6,230
Oct-25-2006	16	6,950
Oct-26-2006	15	7,410
Oct-27-2006	14	6,540
Oct-28-2006	14	6,240
Oct-29-2006	14	6,030
Oct-30-2006	14	6,040
Oct-31-2006	14	6,130
Mean	14	5,700

Table 2a. Continuous water monitoring at Stations B and B2 (San Luis Drain Terminus), October 2006.

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-01-2006	21	20.6	9.2	4,750	43.9	5.0
Oct-02-2006	23	20.2	6.5	3,670	30.3	3.7
Oct-03-2006	23	20.3	6.1	3,660	32.5	4.0
Oct-04-2006	20	20.1	6.1	3,590	29.8	3.2
Oct-05-2006	19	20.1	5.4	3,180	25.8	2.6
Oct-06-2006	19	19.7	6.7	4,070	34.7	3.5
Oct-07-2006	20	19.6	6.7	3,940	38.5	4.2
Oct-08-2006	21	20.1	6.7	4,230	65.1	7.2
Oct-09-2006	19	20.6	6.6	4,180	48.2	4.9
Oct-10-2006	14	20.6	5.7	3,710	33.6	2.6
Oct-11-2006	17	20.4	5.6	3,750	31.0 e	2.8
Oct-12-2006	20	20.1	5.9	3,790	30.4	3.3
Oct-13-2006	21	19.8	5.0	3,280	22.6	2.6
Oct-14-2006	23	19.4	5.4	3,570	26.2	3.2
Oct-15-2006	23	19.1	6.4	3,940	32.4	4.0
Oct-16-2006	22	18.9	6.5	4,000	34.4	4.1
Oct-17-2006	21	18.4	7.2	4,500	71.6	8.0
Oct-18-2006	21	17.6	7.6	4,690	79.0	9.1
Oct-19-2006	21	17.7	7.6	4,660	82.0	9.4
Oct-20-2006	20	18.0	7.3	4,660	75.8	8.3
Oct-21-2006	19	18.3	6.6	4,320	60.8	6.4
Oct-22-2006	20	18.6	7.1	4,350	65.1	7.1
Oct-23-2006	21	19.1	7.5	4,660	74.3	8.2
Oct-24-2006	21	19.2	6.9	4,530	68.4	7.6
Oct-25-2006	19	17.2	6.8	4,400	65.6	6.8
Oct-26-2006	22	15.6	6.9	4,470	67.4	8.0
Oct-27-2006	21	15.9	7.2	4,510	70.6	8.0
Oct-28-2006	21	16.2	7.2	4,540	74.8	8.3
Oct-29-2006	21	16.3	7.3	4,660	79.2	8.8
Oct-30-2006	21	16.3	7.5	4,790	81.2	9.0
Oct-31-2006	21	15.9	8.7	5,250	93.4	10.4
Mean	20	18.7	6.8	4,200	53.8	5.9
Total Acre-feet	1,260					
Total (lbs)						184

Load Limitation for October 2006 (lbs)	328
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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.

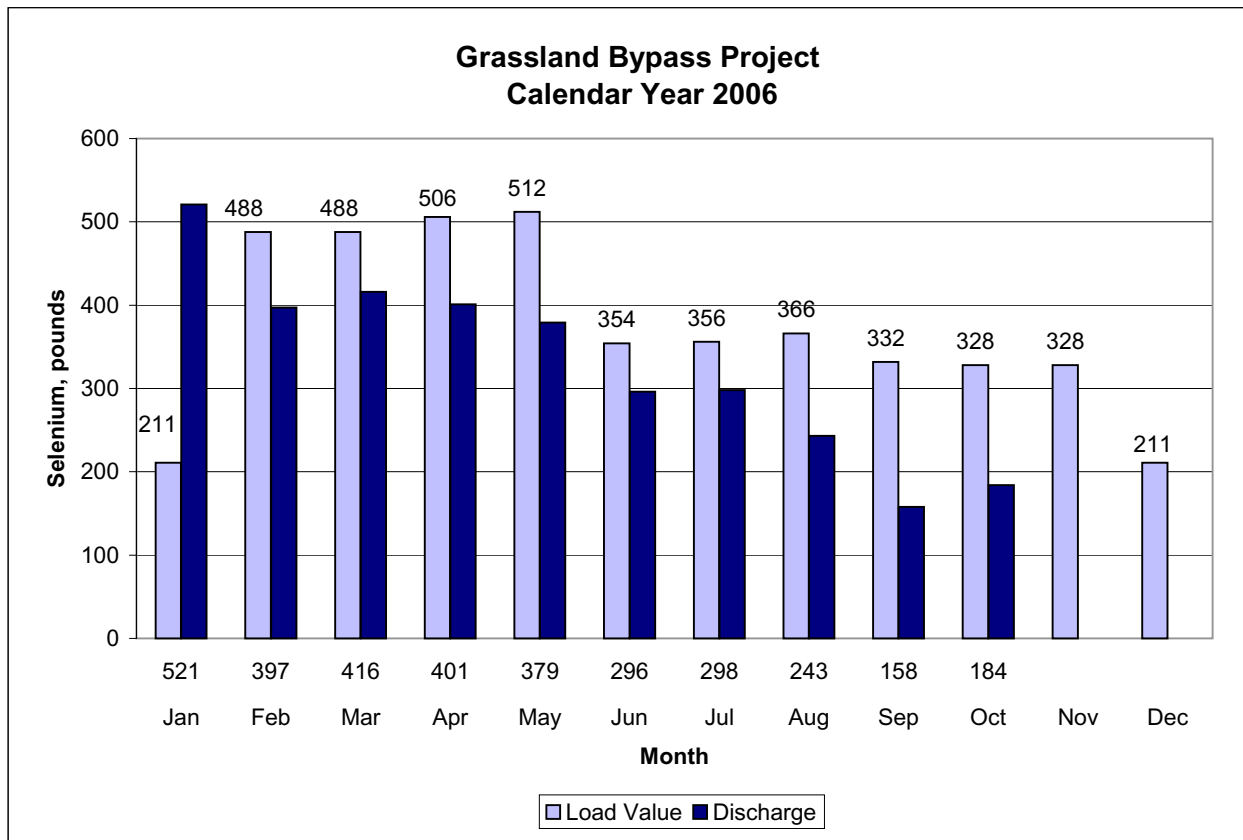


Table 3. Continuous water monitoring at Station D (Mud Slough North downstream of drainage discharges), October 2006.

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-01-2006	87	19.3	1,760
Oct-02-2006	93	19.4	1,590
Oct-03-2006	98	19.5	1,430
Oct-04-2006	89	19.4	1,550
Oct-05-2006	93	19.1	1,390
Oct-06-2006	107	18.8	1,300
Oct-07-2006	122	18.9	1,300
Oct-08-2006	133	19.4	1,200
Oct-09-2006	132	20.0	1,210
Oct-10-2006	129	19.8	1,100
Oct-11-2006	134	19.4	1,120
Oct-12-2006	146	19.4	1,170
Oct-13-2006	150	18.9	1,170
Oct-14-2006	156	18.5	1,140
Oct-15-2006	167	18.2	1,180
Oct-16-2006	181	18.2	1,140
Oct-17-2006	207	17.6	1,070
Oct-18-2006	222	16.7	1,080
Oct-19-2006	224	17.0	1,100
Oct-20-2006	210	17.7	1,140
Oct-21-2006	190	18.2	1,160
Oct-22-2006	196	18.7	1,120
Oct-23-2006	204	19.0	1,130
Oct-24-2006	214	18.9	1,130
Oct-25-2006	216	16.7	1,100
Oct-26-2006	223	15.0	1,110
Oct-27-2006	217	15.4	1,190
Oct-28-2006	208	15.7	1,220
Oct-29-2006	204	16.0	1,240
Oct-30-2006	195	15.8	1,280
Oct-31-2006	190	15.2	1,330
Mean	166	18.1	1,230

Table 4. Continuous water monitoring at Station F (Salt Slough at Highway 165), October 2006.

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-01-2006	84	18.5	1,010
Oct-02-2006	110	18.8	937
Oct-03-2006	122	19.2	876
Oct-04-2006	118	19.2	897
Oct-05-2006	124	18.8	935
Oct-06-2006	144	18.3	821
Oct-07-2006	151	18.5	782
Oct-08-2006	146	19.0	792
Oct-09-2006	132	19.4	890
Oct-10-2006	119	19.3	989
Oct-11-2006	118	18.8	995
Oct-12-2006	119	18.8	986
Oct-13-2006	120	18.3	1,020
Oct-14-2006	120	17.9	1,040
Oct-15-2006	140	17.7	999
Oct-16-2006	165	17.8	907
Oct-17-2006	188	17.4	836
Oct-18-2006	196	16.4	839
Oct-19-2006	203	16.6	838
Oct-20-2006	200	16.9	877
Oct-21-2006	184	17.3	976
Oct-22-2006	175	17.8	1,060
Oct-23-2006	175	18.1	1,090
Oct-24-2006	178	18.0	1,030
Oct-25-2006	182	16.2	983
Oct-26-2006	177	14.8	988
Oct-27-2006	179	14.8	999
Oct-28-2006	183	14.8	1,010
Oct-29-2006	174	15.0	1,030
Oct-30-2006	172	14.9	1,030
Oct-31-2006	171	14.5	1,050
Mean	154	17.5	950

Table 5. Continuous water monitoring at Station N (San Joaquin River at Crow's Landing), October 2006.

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-01-2006	1,030	18.2	654	1.0
Oct-02-2006	1,060	17.9	605	0.9
Oct-03-2006	1,100	18.3	588	1.1
Oct-04-2006	1,090	18.5	596	0.8
Oct-05-2006	1,080	18.5	582	1.1
Oct-06-2006	1,110	18.4	590	0.7
Oct-07-2006	1,270	18.4	492	0.6
Oct-08-2006	1,400	18.4	436	0.8
Oct-09-2006	1,500	18.4	390	0.7
Oct-10-2006	1,430	18.1	376	1.0
Oct-11-2006	1,430	17.8	400	0.7
Oct-12-2006	1,440	17.7	405	0.7
Oct-13-2006	1,450	17.5	406	0.6
Oct-14-2006	1,460	17.4	412	0.6
Oct-15-2006	1,490	17.1	422	0.5
Oct-16-2006	1,560	17.0	436	0.7
Oct-17-2006	1,580	16.6	445	0.7
Oct-18-2006	1,630	15.9	436	0.7
Oct-19-2006	1,620	15.8	433	1.2
Oct-20-2006	1,650	16.1	439	1.2
Oct-21-2006	1,650	16.4	455	1.2
Oct-22-2006	1,630	16.7	463	1.0
Oct-23-2006	1,650	16.9	461	0.9
Oct-24-2006	1,640	16.9	464	1.0
Oct-25-2006	1,660	15.9	485	1.6
Oct-26-2006	1,660	14.7	464	0.9
Oct-27-2006	1,690	14.6	474	0.9
Oct-28-2006	1,680	14.5	492	1.0
Oct-29-2006	1,620	14.5	666	1.0
Oct-30-2006	1,630	14.4	540	1.0
Oct-31-2006	1,580	14.2	578	1.2
Mean	1,470	16.8	490	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-02-2006	40	.	.	3,660	130	.	.	.
Aug-09-2006	34	.	.	5,010	120	.	.	.
Aug-16-2006	33	.	.	3,660	150	.	.	.
Aug-23-2006	31	.	.	4,580	160	.	.	.
Aug-30-2006	41	.	.	3,750	140	.	.	.
Sep-06-2006	24	.	.	4,230	140	.	.	.
Sep-13-2006	30	.	.	4,020	120	.	.	.
Sep-20-2006	16	.	.	5,460	42	.	.	.
Sep-27-2006	19	.	.	3,690	61	.	.	.
Oct-04-2006	11	.	.	4,660	23	.	.	.
Oct-11-2006	17	.	.	5,250	66	.	.	.
Oct-18-2006	15	.	.	5,410	46	.	.	.
Oct-25-2006	16	.	.	6,600	130	.	.	.

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-01-2006	40	.	.	4,510	.	41.4	.	6.8
Aug-08-2006	36	.	.	4,440	.	42.9	.	7.2
Aug-15-2006	34	.	.	4,610	.	49.0	.	8.0
Aug-22-2006	31	.	.	4,300	.	39.6	.	6.9
Aug-29-2006	36	.	.	4,270	.	42.8	.	6.4
Sep-05-2006	29	.	.	3,730	.	33.8	.	6.9
Sep-12-2006	29	.	.	4,250	.	45.0	.	7.7
Sep-19-2006	16	.	.	4,590	.	47.0	.	8.3
Sep-26-2006	18	.	.	4,540	.	45.4	.	8.3
Oct-03-2006	13	.	.	4,390	.	57.0	.	7.4
Oct-10-2006	11	.	.	4,570	.	50.0	.	7.1
Oct-17-2006	16	.	.	5,380	.	104	.	8.8
Oct-24-2006	15	.	.	5,740	.	119	.	9.8
Oct-31-2006	14	.	.	6,080	.	118	.	10.0

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-03-2006	41	24.6	8.5	4,460	61	41.0	7.1
Aug-10-2006	35	25.1	8.7	4,860	59	48.0	8.0
Aug-17-2006	33	23.3	8.5	4,870	55	54.4	8.1
Aug-24-2006	32	24.6	8.6	4,270	40	38.4	6.4
Aug-31-2006	40	24.8	8.1	3,540	37	31.5	6.1
Sep-07-2006	27	24.6	7.8	3,700	31	31.6	6.4
Sep-14-2006	33	24.1	8.1	4,170	45	36.7	7.6
Sep-21-2006	20	19.2	8.5	4,630	38	43.1	8.8
Sep-28-2006	22	20.9	8.2	4,070	41	31.5	7.2
Oct-05-2006	19	18.9	8.3	3,150	33	23.2	4.9
Oct-12-2006	20	18.4	8.4	4,010	46	33.0	6.0
Oct-19-2006	21	15.9	8.3	4,710	46	82.8	7.8
Oct-26-2006	22	14.2	8.4	4,500	47	65.2	6.8

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
Aug-03-2006	62	23.8	8.3	908	.	1.3	1.0
Aug-10-2006	44	24.8	8.0	826	.	0.9	0.9
Aug-17-2006	17	22.9	8.4	1,160	.	0.8	1.1
Aug-24-2006	22	23.7	8.5	862	.	0.9	0.7
Aug-31-2006	10	22.0	8.3	1,210	.	0.7	1.1
Sep-07-2006	62	23.5	8.1	463	.	0.5	0.3
Sep-14-2006	69	23.4	7.9	614	.	<0.4	0.5
Sep-21-2006	54	19.0	7.8	611	.	<0.4	0.4
Sep-28-2006	44	19.4	7.9	774	.	0.5	0.6
Oct-05-2006	74	18.1	7.8	851	.	<0.4	0.6
Oct-12-2006	126	18.1	7.5	759	.	<0.4	0.6
Oct-19-2006	203	15.8	7.6	725	.	0.4	0.6
Oct-26-2006	201	13.8	7.7	773	.	<0.4	0.6

** 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-03-2006	103	24.2	8.5	2,490	17.3	3.6
Aug-10-2006	79	24.3	8.4	2,480	17.1	3.3
Aug-17-2006	50	22.9	8.6	4,050	39.9	6.7
Aug-24-2006	54	23.6	8.4	3,030	22.4	4.4
Aug-31-2006	50	24.1	8.3	3,670	31.4	6.6
Sep-07-2006	89	24.1	7.8	1,320	7.9	1.8
Sep-14-2006	102	23.5	7.8	1,830	12.5	2.7
Sep-21-2006	74	18.8	8.1	1,630	10.2	2.5
Sep-28-2006	66	19.7	7.9	2,050	11.3	3.0
Oct-05-2006	93	18.2	7.8	1,360	4.4	1.6
Oct-12-2006	146	18.1	7.6	1,160	3.9	1.2
Oct-19-2006	224	15.9	7.7	1,120	7.1	1.3
Oct-26-2006	223	13.8	7.7	1,130	6.0	1.1

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
Aug-02-2006	.	8.1	2,500	77	16.8	4.2
Aug-08-2006	.	8.7	2,120	78	13.0	3.2
Aug-14-2006	.	8.5	2,650	27	26.9	6.2
Aug-23-2006	.	8.7	2,780	28	19.6	4.8
Aug-30-2006	.	8.3	3,780	21	28.8	6.8
Sep-06-2006	.	8.7	1,580	33	9.0	2.3
Sep-12-2006	.	8.5	2,040	27	11.6	3.3
Sep-18-2006	.	8.2	2,000	24	15.5	3.0
Sep-27-2006	.	8.1	2,180	38	12.8	3.3
Oct-11-2006	.	7.6	1,280	19	3.7	1.4
Oct-16-2006	.	8.0	1,120	17	3.3	1.3
Oct-24-2006	.	7.4	1,150	11	6.3	1.3

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-03-2006	163	24.0	7.5	874	0.9	0.5
Aug-10-2006	195	24.6	7.7	834	0.7	0.5
Aug-17-2006	195	21.4	7.5	873	0.7	0.5
Aug-24-2006	196	23.2	7.8	803	0.7	0.4
Aug-31-2006	86	22.4	7.8	1,200	0.5	0.7
Sep-07-2006	105	23.1	7.7	1,170	0.5	0.6
Sep-14-2006	88	22.4	7.5	1,040	0.5	0.5
Sep-21-2006	56	17.3	7.9	1,560	<0.4	0.8
Sep-28-2006	92	19.5	7.8	981	0.5	0.5
Oct-05-2006	124	18.2	7.6	963	<0.4	0.5
Oct-12-2006	119	17.4	7.7	1,040	0.7	0.6
Oct-19-2006	203	15.3	7.7	867	0.5	0.5
Oct-26-2006	177	13.6	7.7	1,030	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
Aug-02-2006	15	.	.	466	1.2	0.3
Aug-09-2006	40	.	.	399	1.1	0.3
Aug-16-2006	40	.	.	380	0.8	0.3
Aug-23-2006	40	.	.	442	0.9	0.3
Aug-30-2006	65	.	.	393	0.8	0.2
Sep-06-2006	85	.	.	317	0.7	0.2
Sep-13-2006	85	.	.	335	0.6	0.2
Sep-20-2006	125	.	.	435	0.8	0.2
Sep-27-2006	160	.	.	400	1.0	0.2
Oct-04-2006	190	.	.	294	<0.4	0.1
Oct-11-2006	115	.	.	326	0.6	0.1
Oct-18-2006	65	.	.	321	0.6	0.1
Oct-25-2006	30	.	.	325	0.6	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 ^{††}	.	.	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	.	.	µS/cm	µg/L	mg/L
Aug-02-2006	45	.	.	443	1.0	0.2
Aug-09-2006	45	.	.	362	1.1	0.2
Aug-16-2006	45	.	.	376	0.7	0.2
Aug-23-2006	25	.	.	324	0.7	0.2
Aug-30-2006	85	.	.	388	1.2	0.2
Sep-06-2006	100	.	.	304	0.7	0.2
Sep-13-2006	110	.	.	304	0.6	0.1
Sep-20-2006	150	.	.	323	0.6	0.2
Sep-27-2006	160	.	.	326	0.6	0.2
Oct-04-2006	160	.	.	388	<0.4	0.2
Oct-11-2006	85	.	.	296	0.7	0.1
Oct-18-2006	65	.	.	307	0.5	0.2
Oct-25-2006	65	.	.	320	0.6	0.2

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-02-2006	0	.	.	1,170	1.7	1.0
Aug-09-2006	20	.	.	539	1.0	0.4
Aug-16-2006	20	.	.	772	1.2	0.7
Aug-23-2006	60	.	.	510	0.9	0.4
Aug-30-2006	105	.	.	403	0.9	0.2
Sep-06-2006	125	.	.	417	0.9	0.3
Sep-13-2006	125	.	.	508	0.8	0.4
Sep-20-2006	125	.	.	407	0.7	0.3
Sep-27-2006	125	.	.	380	0.7	0.2
Oct-04-2006	125	.	.	371	<0.4	0.2
Oct-11-2006	100	.	.	372	0.6	0.2
Oct-18-2006	70	.	.	326	0.6	0.2
Oct-25-2006	50	.	.	371	0.6	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 ^{††}	.	.	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	.	.	µS/cm	µg/L	mg/L
Aug-02-2006	NA	.	.	686	1.2	0.8
Aug-09-2006	NA	.	.	680	1.1	1.0
Aug-16-2006	NA	.	.	693	1.1	0.9
Aug-23-2006	NA	.	.	669	1.1	0.8
Aug-30-2006	NA	.	.	625	1.0	0.6
Sep-06-2006	NA	.	.	487	0.8	0.3
Sep-13-2006	NA	.	.	492	0.8	0.4
Sep-20-2006	NA	.	.	500	0.7	0.4
Sep-27-2006	NA	.	.	710	0.8	0.6
Oct-04-2006	NA	.	.	560	0.5	0.5
Oct-11-2006	NA	.	.	550	0.7	0.4
Oct-18-2006	NA	.	.	522	0.6	0.5
Oct-25-2006	NA	.	.	643	0.7	0.6

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-02-2006	.	.	.	260	0.7	0.1
Aug-09-2006	.	.	.	294	0.8	0.1
Aug-16-2006	.	.	.	308	0.7	0.2
Aug-23-2006	.	.	.	351	0.8	0.2
Aug-30-2006	.	.	.	380	0.8	0.2
Sep-06-2006	.	.	.	426	1.0	0.3
Sep-13-2006	.	.	.	377	0.7	0.2
Sep-20-2006	.	.	.	305	0.6	0.1
Sep-27-2006	.	.	.	400	0.7	0.2
Oct-04-2006	.	.	.	318	<0.4	0.1
Oct-11-2006	.	.	.	360	0.7	0.2
Oct-18-2006	.	.	.	300	0.7	0.1
Oct-25-2006	.	.	.	327	0.6	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
Aug-03-2006	293	24.1	7.9	1,130	0.6	0.4
Aug-10-2006	288	25.4	7.9	888	0.9	0.4
Aug-17-2006	358	23.8	7.8	849	0.5	0.4
Aug-24-2006	310	24.1	7.6	812	0.6	0.3
Aug-31-2006	200	24.5	7.8	959	0.4	0.4
Sep-07-2006	176	24.5	7.8	1,200	0.5	0.5
Sep-14-2006	197	24.1	7.5	852	<0.4	0.3
Sep-21-2006	156	19.8	7.5	1,030	<0.4	0.3
Sep-28-2006	149	20.2	7.6	1,080	0.4	0.4
Oct-05-2006	229	18.6	7.4	707	<0.4	0.3
Oct-12-2006	230	18.0	7.6	743	<0.4	0.4
Oct-19-2006	267	15.7	7.7	775	0.5	0.4
Oct-26-2006	248	13.8	7.9	913	0.4	0.4

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-01-2006	.	.	.	NA	3.4	1.1
Aug-08-2006	.	.	.	NA	2.9	1.0
Aug-15-2006	.	.	.	NA	3.4	1.2
Sep-05-2006	.	.	.	NA	0.8	0.2
Sep-12-2006	.	.	.	NA	2.9	0.9
Sep-19-2006	.	.	.	NA	4.4	1.2
Oct-10-2006	.	.	.	NA	2.5	0.7
Oct-17-2006	.	.	.	NA	1.8	0.7
Oct-24-2006	.	.	.	NA	2.6	0.9
Oct-31-2006	.	.	.	NA	2.8	0.8

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-03-2006	1,320	23.6	7.8	699	1.6	0.4
Aug-10-2006	1270	23.7	7.8	621	1.6	0.4
Aug-17-2006	1,330	22.5	7.6	635	1.4	0.4
Aug-24-2006	1,240	22.5	7.6	608	1.3	0.4
Aug-31-2006	1,180	22.6	7.6	650	1.5	0.5
Sep-07-2006	1,180	22.4	7.6	547	0.9	0.3
Sep-14-2006	1,270	22.1	7.6	552	1.1	0.4
Sep-21-2006	1,200	18.7	7.6	511	0.8	0.3
Sep-28-2006	1,040	19.5	7.6	611	1.1	0.4
Oct-05-2006	1,080	18.1	7.5	591	0.6	0.3
Oct-12-2006	1,440	17.1	7.6	404	0.6	0.2
Oct-19-2006	1,620	15.3	7.7	456	1.2	0.3
Oct-26-2006	1,660	14.1	7.7	414	0.8	0.3

Table 20. Summary of fathead minnow (*Pimephales promelas*) larvae survival in 7-day tests using water samples collected from November 2005 to October 2006. 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-2006	98	95	90	98	95	98
Dec-2006	95	28*	55*	63	95	98
Jan-2006	100	95	95	100	73	100
Feb-2006	98	95	98	100	100	100
Mar-2006	93	95	98	90	98	95
Apr-2006	90	95	98	100	95	100
May-2006	95	100	98	100	88	100
Jun-2006	93	100	98	98	98	100
Jul-2006	83	98	100	100	95	95
Aug-2006	98	98	95	98	98	90
Sep-2006	98	95	98	98	100	98
Oct-2006	95	85	85	90	98	100

Table 21. Summary of fathead minnow (*Pimephales promelas*) larvae growth in 7-day tests using water samples collected from November 2005 to October 2006. 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-2006	0.31	0.32	0.30	0.29	0.31	0.31
Dec-2006	0.36	0.12*	0.23	0.25	0.33	0.31
Jan-2006	0.47	0.43	0.46	0.43	0.35	0.36
Feb-2006	0.39	0.39	0.42	0.42	0.31	0.28
Mar-2006	0.49	0.45	0.45	0.45	0.46	0.40
Apr-2006	0.31	0.38	0.36	0.36	0.29	0.28
May-2006	0.38	0.43	0.39	0.58	0.34	0.33
Jun-2006	0.45*	0.41*	0.46*	0.49	0.54	0.41
Jul-2006	0.34	0.36	0.38	0.56	0.36	0.35
Aug-2006	0.36	0.33	0.38	0.37	0.39	0.33
Sep-2006	0.31	0.39	0.41	0.35	0.33	0.34
Oct-2006	0.39	0.36	0.36	0.35	0.40	0.40

Table 22. Summary of *Daphnia magna* survival in 7-day tests using water samples collected from November 2005 to October 2006. 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-2006	80	80	100	90	100	100
Dec-2006	100	80	70	70	80	100
Jan-2006	90	90	80	80	80	100
Feb-2006	100	100	100	100	100	50†
Mar-2006	100	90	80	80	80	100
Apr-2006	80	90	100	90	100	100
May-2006	100	90	100	100	100	100
Jun-2006	90	90	100	90	90	80
Jul-2006	80	100	80	90	80	100
Aug-2006	100	100	90	100	100	100
Sep-2006	100	80	100	100	100	90
Oct-2006	70	80	100	80	90	80

Table 23. Summary of *Daphnia magna* reproduction in 7-day tests using water samples collected from November 2005 to October 2006. 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-2006	17.8	16.1	16.7	15.7	16.9	17.0
Dec-2006	19.0	17.4	14.9	13.4	19.8	22.4
Jan-2006	32.2	29.6	33.1	24.7	25.3	26.6
Feb-2006	30.7	34.8	34.9	30.8	32.0	13.2
Mar-2006	39.0	33.0	28.2	28.8	31.5	33.9
Apr-2006	43.6	42.7	43.5	39.9	32.7	37.4
May-2006	49.2	28.1	27.3	26.4	22.9	18.2
Jun-2006	26.2	25.9	29.9	26.7	20.9	19.1
Jul-2006	35.8	42.3	42.1	35.4	32.7	29.3
Aug-2006	34.7	33.3	23.9*	31.4	36.2	30.8
Sep-2006	25.9	20.1	23.8	26.9	27.6	23.6
Oct-2006	25.9	27.4	30.1	26.3	26.9	19.6

Table 24. Summary of *Selenastrum capricornutum* growth in 4-day tests using water samples collected from November 2005 to October 2006. 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-2006	17.7	22.3	22.8	19.0	15.6	18.1
Dec-2006	13.8*	26.9	37.2	21.1	22.1	23.4
Jan-2006	8.9*	27.5	29.5	24.3	22.5	25.5
Feb-2006	8.3*	12.6	5.9*	1.7*	12.8	23.8
Mar-2006	17.4	24.2	25.0	24.0	15.4	23.9
Apr-2006	9.9	21.5	18.8	18.6	12.7	19.7
May-2006	20.6	11.5*	15.9	13.6	15.4	16.4
Jun-2006	12.0	9.7	10.0	10.2	11.3	16.0
Jul-2006	19.0	14.4	22.5	17.9	9.5	14.0
Aug-2006	16.4	17.8	17.3	21.4	16.8	13.5
Sep-2006	4.1*	20.7	21.7	22.6	17.7	12.9
Oct-2006	21.4	27.8	30.4	23.4	12.5	20.3

Table 25. Summary of selenium concentrations in grab water samples collected at study stations for use in laboratory toxicity tests, August 2006 to October 2006.

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-14-2006	53	0.7	26	0.7	<0.4
Aug-16-2006	52	0.7	38**	0.7	<0.4
Aug-18-2006	45	0.8	20	0.6	<0.4
Sep-11-2006	32	0.6	9.2	0.5	<0.4
Sep-13-2006	41	0.5	12	0.4	<0.4
Sep-15-2006	34	<0.4	12	<0.4	<0.4
Oct-23-2006	76	0.4	5.9	0.4	<0.4
Oct-25-2006	68	<0.4	4.4	0.5	0.5
Oct-27-2006	69	<0.4	5.9	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, August 2006 to October 2006.

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-14-2006	39	268	144	182	64
Aug-16-2006	71	217	85	108	49
Aug-18-2006	92	220	152	162	41
Sep-11-2006	20	82	83	108	27
Sep-13-2006	38	65	70	118	40
Sep-15-2006	40	80	77	69	33
Oct-23-2006	45	43	53	66	9
Oct-25-2006	89	43	52	142	20
Oct-27-2006	70	48	67	117	17

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 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