

GRASSLAND BYPASS PROJECT

MONTHLY DATA REPORT

February 2011

June 15, 2011

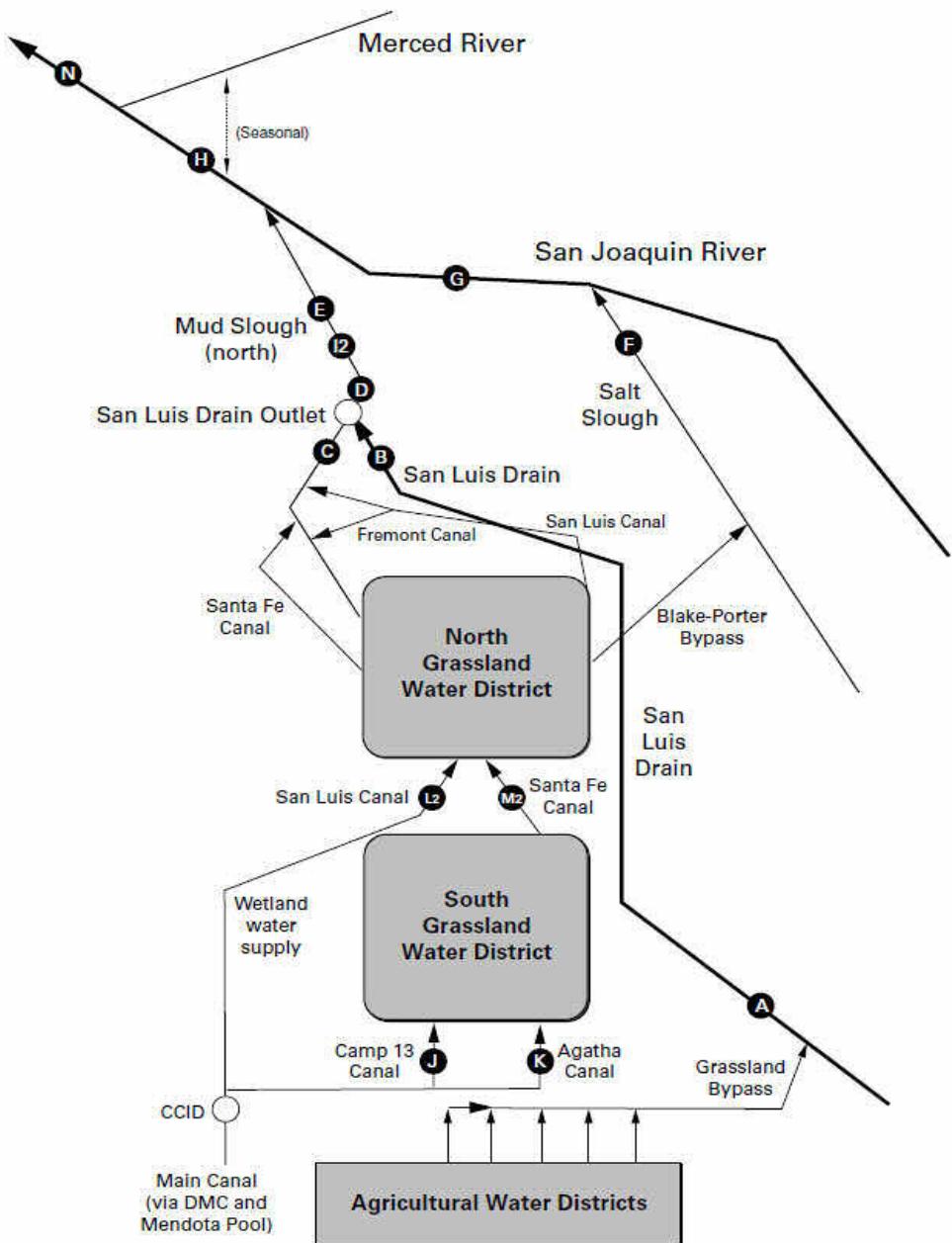
Preliminary Results

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), February 2011.

See Table 28 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Specific Conductance
DATA SOURCE	SLDMWA	SLDMWA
UNITS	cfs	µS/cm
Feb-01-2011	11	5,850
Feb-02-2011	19	5,750
Feb-03-2011	20	5,810
Feb-04-2011	23	5,910
Feb-05-2011	25	6,080
Feb-06-2011	29	5,840
Feb-07-2011	28	5,470
Feb-08-2011	25	5,570
Feb-09-2011	25	5,860
Feb-10-2011	23	5,490
Feb-11-2011	22	5,490
Feb-12-2011	20	5,520
Feb-13-2011	24	5,540
Feb-14-2011	28	5,490
Feb-15-2011	26	5,670
Feb-16-2011	26	5,450
Feb-17-2011	28	5,220
Feb-18-2011	48	4,810
Feb-19-2011	78	5,030
Feb-20-2011	75	4,750
Feb-21-2011	57	4,800
Feb-22-2011	48	4,780
Feb-23-2011	42	4,900
Feb-24-2011	44	4,960
Feb-25-2011	43	4,820
Feb-26-2011	46	4,720
Feb-27-2011	47	4,860
Feb-28-2011	42	4,870
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Mean	35	5,330

Table 2a. Continuous water monitoring at Stations B and B2 (San Luis Drain Terminus), February 2011.

See Table 28 for explanation of footnotes and agency abbreviations.

PARAMETER	San Luis Drain Outlet	Temperature	Boron	Specific Conductance	Selenium (total)	Selenium (total) Load
	Flow					
DATA SOURCE	SLDMWA+	SLDMWA	CVRWQCB	SLDMWA	CVRWQCB	Computed
UNITS	cfs	°C	mg/L	µS/cm	µg/L	lbs
Feb-01-2011	19	10.7	9.1	5,050	27.0	2.8
Feb-02-2011	18	10.7	8.5	5,050	20.5	2.0
Feb-03-2011	23	10.7	8.8	4,920	18.3	2.2
Feb-04-2011	25	11.1	9.0	5,000	20.4	2.8
Feb-05-2011	28	11.6	9.8	5,420	23.8	3.6
Feb-06-2011	30	12.3	9.5	5,160	33.2	5.4
Feb-07-2011	34	12.9	9.8	5,380	40.7	7.4
Feb-08-2011	31	11.3	10.0	5,620	56.9	9.5
Feb-09-2011	34	10.5	10.0	5,870	59.3	11.0
Feb-10-2011	31	11.0	9.9	5,670	59.3	10.0
Feb-11-2011	29	11.3	9.2	5,360	58.5	9.1
Feb-12-2011	28	11.8	9.5	5,350	56.1	8.4
Feb-13-2011	26	12.6	9.8	5,550	57.1	7.9
Feb-14-2011	30	12.8	9.0	5,320	45.2	7.3
Feb-15-2011	33	13.1	8.9	5,140	43.0	7.8
Feb-16-2011	32	13.0	NA***	5,090	P	P
Feb-17-2011	34	11.6	NA***	5,370	P	P
Feb-18-2011	35	10.5	NA***	5,110	P	P
Feb-19-2011	55	10.4	NA***	5,070	P	P
Feb-20-2011	84	10.6	NA***	4,760	P	P
Feb-21-2011	77	11.4	NA***	5,180	P	P
Feb-22-2011	62	11.8	NA***	4,950	P	P
Feb-23-2011	54	12.3	NA***	5,010	P	P
Feb-24-2011	50	12.2	NA***	5,080	P	P
Feb-25-2011	51	11.5	NA***	4,880	P	P
Feb-26-2011	49	10.7	NA***	4,960	P	P
Feb-27-2011	52	10.3	NA***	5,010	P	P
Feb-28-2011	51	10.8	NA***	4,930	P	P

Mean	39	11.5	9.4	5,190	41.3	6.5
Total Acre-feet	2,190					
Total (lbs)						256 e

Load Limitation for February 2011 (lbs)

488

***Data failed QA. Daily samples taken from February 16 - 28 by an autosampler collecting discharge from the San Luis Drain failed quality assurance for boron because an equipment rinse had a result higher than the reporting limit. The equipment rinse is conducted with deionized water and should show results below the reporting limit. Selenium samples will be re-analyzed.

♦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.

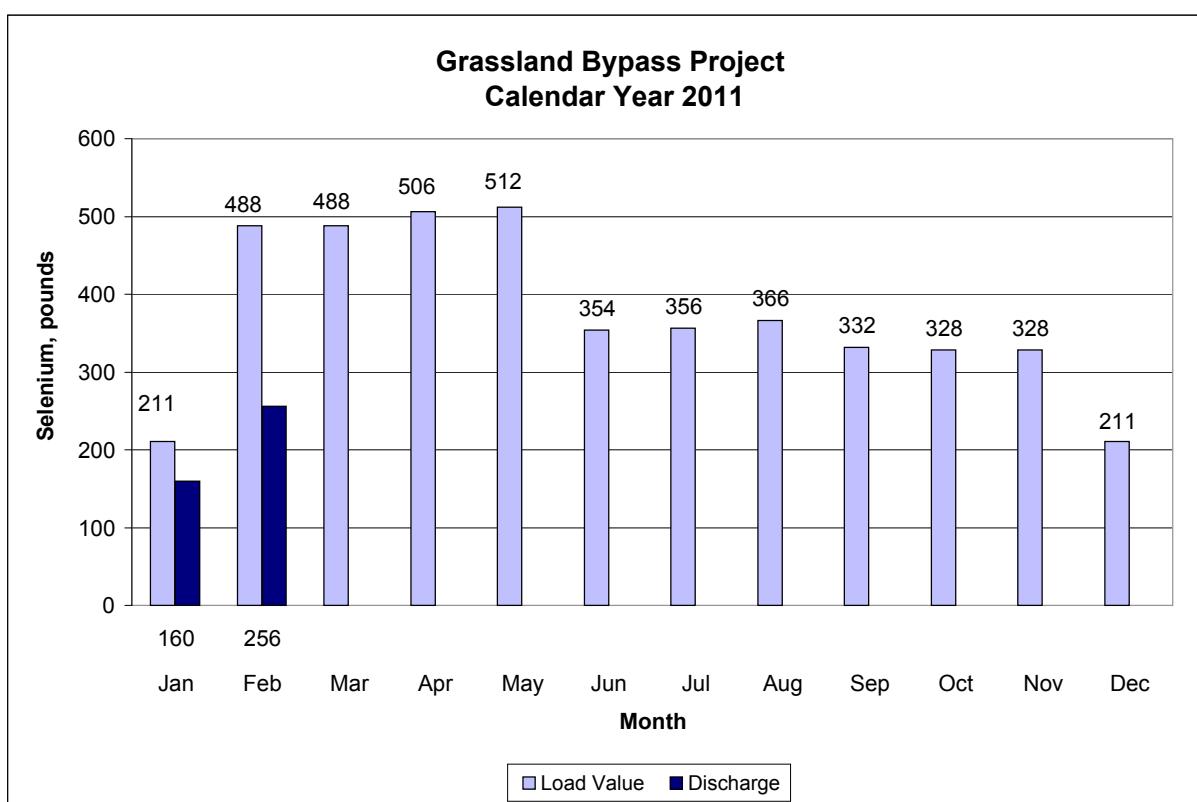


Table 3. Continuous water monitoring at Station D (Mud Slough North downstream of drainage discharges), February 2011.

See Table 28 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Temperature	Specific Conductance
DATA SOURCE	USGS	USGS	USGS
UNITS	cfs	°C	µS/cm
Feb-01-2011	40	10.7	2,650
Feb-02-2011	47	10.5	2,430
Feb-03-2011	49	10.7	2,550
Feb-04-2011	37	11.1	2,810
Feb-05-2011	37	11.8	2,960
Feb-06-2011	42	12.6	2,850
Feb-07-2011	46	13.4	2,910
Feb-08-2011	42	11.5	3,000
Feb-09-2011	52	10.8	2,910
Feb-10-2011	51	11.2	2,830
Feb-11-2011	47	11.8	2,800
Feb-12-2011	43	12.4	2,830
Feb-13-2011	37	13.3	2,910
Feb-14-2011	39	13.1	2,870
Feb-15-2011	48	13.3	2,780
Feb-16-2011	48	13.1	2,730
Feb-17-2011	48	11.1	2,860
Feb-18-2011	65	10.1	2,690
Feb-19-2011	124	10.0	2,390
Feb-20-2011	182	10.6	2,410
Feb-21-2011	206	11.5	2,220
Feb-22-2011	206	11.7	1,990
Feb-23-2011	198	12.0	1,850
Feb-24-2011	207	11.6	1,730
Feb-25-2011	NA	NA	NA
Feb-26-2011	223	10.6	1,650
Feb-27-2011	216	10.2	1,690
Feb-28-2011	215	10.9	1,660
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Mean	96	11.5	2,520

Table 4. Continuous water monitoring at Station F (Salt Slough at Highway 165), February 2011.

See Table 28 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Temperature	Specific Conductance
DATA SOURCE	usgs	usgs	usgs
UNITS	cfs	°C	µS/cm
Feb-01-2011	133	10.2	1,400
Feb-02-2011	130	10.2	1,530
Feb-03-2011	126	10.2	1,670
Feb-04-2011	120	10.5	1,780
Feb-05-2011	123	11.0	1,510
Feb-06-2011	127	11.7	1,430
Feb-07-2011	131	12.4	1,360
Feb-08-2011	132	11.2	1,270
Feb-09-2011	130	10.6	1,500
Feb-10-2011	130	10.6	1,630
Feb-11-2011	133	10.8	1,470
Feb-12-2011	133	11.3	1,510
Feb-13-2011	129	12.1	1,630
Feb-14-2011	131	12.5	1,430
Feb-15-2011	136	12.6	1,320
Feb-16-2011	140	12.6	1,250
Feb-17-2011	140	11.1	1,320
Feb-18-2011	141	10.1	1,330
Feb-19-2011	146	9.9	1,320
Feb-20-2011	156	10.4	1,330
Feb-21-2011	174	11.1	1,300
Feb-22-2011	220	11.2	1,290
Feb-23-2011	409	11.5	1,300
Feb-24-2011	438	11.4	1,330
Feb-25-2011	NA	NA	NA
Feb-26-2011	428	10.4	1,340
Feb-27-2011	446	10.0	1,230
Feb-28-2011	471	10.2	1,210
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Mean	195	11.0	1,410

Table 5. Continuous water monitoring at Station N (San Joaquin River at Crow's Landing), February 2011.

See Table 28 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
Feb-01-2011	4,240	9.9	390	0.4
Feb-02-2011	4,150	9.7	390	<0.4
Feb-03-2011	4,240	9.7	380	0.4
Feb-04-2011	4,290	9.8	360	<0.4
Feb-05-2011	4,250	10.0	380	<0.4
Feb-06-2011	4,200	10.4	380	<0.4
Feb-07-2011	4,150	10.8	380	0.4
Feb-08-2011	4,140	10.5	380	0.5
Feb-09-2011	4,090	10.1	390	0.5
Feb-10-2011	4,070	10.0	390	0.7
Feb-11-2011	4,060	10.1	410	0.5
Feb-12-2011	4,050	10.3	400	0.7
Feb-13-2011	4,040	10.6	400	0.6
Feb-14-2011	4,020	10.7	390	0.7
Feb-15-2011	4,020	11.0	390	0.6
Feb-16-2011	4,080	11.2	400	0.5
Feb-17-2011	4,140	10.6	390	0.5
Feb-18-2011	4,260	9.7	390	0.5
Feb-19-2011	4,790	9.4	410	0.7
Feb-20-2011	5,440	9.8	400	0.6
Feb-21-2011	5,970	10.2	340	0.7
Feb-22-2011	6,220	10.6	390	0.7
Feb-23-2011	6,180	10.7	NA	NA
Feb-24-2011	5,940	10.7	NA	NA
Feb-25-2011	5,740	NA	NA	NA
Feb-26-2011	5,980	10.1	NA	NA
Feb-27-2011	5,780	9.6	NA	NA
Feb-28-2011	5,740	9.8	NA	NA
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Mean	4,724	10.2	390	0.6

Table 6a. Weekly water quality monitoring at Station A (inflow to San Luis Drain), taken from grab samples.

See Table 28 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow			Specific Conductance	Total Suspended Solids			
DATA SOURCE	SLDMWA	.	.			.	.	.
UNITS	cfs	.	.	µS/cm	mg/L	.	.	.
Dec-06-2010	20	.	.	4,210	188	.	.	.
Dec-13-2010	17	.	.	4,560	210	.	.	.
Dec-20-2010	35	.	.	5,340	194	.	.	.
Dec-27-2010	26	.	.	5,460	121	.	.	.
Jan-03-2011	59	.	.	4,710	268	.	.	.
Jan-10-2011	23	.	.	5,350	33	.	.	.
Jan-17-2011	19	.	.	6,180	82	.	.	.
Jan-24-2011	10	.	.	6,300	23	.	.	.
Jan-31-2011	14	.	.	6,330	81	.	.	.
Feb-07-2011	28	.	.	5,270	149	.	.	.
Feb-14-2011	28	.	.	5,220	139	.	.	.
Feb-21-2011	57	.	.	4,770	128	.	.	.
Feb-28-2011	42	.	.	4,710	97	.	.	.

Table 6b. Weekly water quality monitoring at Station A (inflow to San Luis Drain), taken from composite samples.

See Table 28 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow			Specific Conductance		Selenium (total)		Boron
DATA SOURCE	SLDMWA	.	.				.	.
UNITS	cfs	.	.	µS/cm		µg/L	.	mg/L
Dec-12-2010	16	.	.	4,450	.	43.7	.	8.7
Dec-19-2010	23	.	.	4,700	.	49.3	.	10.0
Dec-26-2010	31	.	.	5,250	.	40.7	.	12.0
Jan-02-2011	44	.	.	4,750	.	47.1	.	11.0
Jan-09-2011	20	.	.	5,450	.	49.3	.	11.0
Jan-16-2011	18	.	.	5,960	.	46.5	.	14.0
Jan-23-2011	9	.	.	6,340	.	52.2	.	13.0
Jan-30-2011	14	.	.	5,870	.	35.4	.	12.0
Feb-06-2011	29	.	.	5,510	.	55.9	.	11.0
Feb-13-2011	24	.	.	5,230	.	58.3	.	10.0
Feb-20-2011	75	.	.	4,800	.	50.0	.	9.8
Feb-27-2011	47	.	.	4,720	.	52.6	.	8.9

Table 7. Weekly water quality monitoring at Station B (discharge from San Luis Drain), taken from grab samples.

See Table 28 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Temperature	pH	Specific Conductance	Total Suspended Solids	Selenium (total)	Boron
DATA SOURCE	SLDMWA	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	°C	.	µS/cm	mg/L	µg/L	mg/L
Dec-07-2010	28	11.7	7.6	3,860	29	41.0	7.1
Dec-14-2010	25	13.8	7.4	3,990	27	34.4	7.5
Dec-21-2010	43	10.9	7.6	3,950	22	35.0	7.5
Dec-28-2010	33	10.7	7.7	4,200	40	28.9	8.4
Jan-04-2011	54	8.3	7.8	4,670	39	35.7	10.0
Jan-11-2011	27	7.5	7.7	4,590	23	40.5	9.1
Jan-18-2011	24	11.4	7.5	8,980	30	40.5	10.0
Jan-25-2011	16	10.8	7.5	5,300	31	37.9	11.0
Feb-01-2011	19	10.5	8	4,820	26	25.6	9.1
Feb-08-2011	31	10.6	8.0	5,090	134	56.5	9.5
Feb-15-2011	33	12.5	7.7	4,720	32	42.2	8.8
Feb-22-2011	62	11.3	7.8	4,680	50	50.2	9.0

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

See Table 28 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
Dec-07-2010	129	11.9	7.8	1,520	.	0.4	1.3
Dec-14-2010	119	13.3	7.5	1,640	.	0.4	1.3
Dec-21-2010	296	10.7	7.7	1,410	.	0.7	1.3
Dec-28-2010	175	10.3	7.7	1,680	.	<0.4	1.6
Jan-04-2011	352	8.6	7.9	1,310	.	0.4	1.3
Jan-11-2011	270	6.8	7.8	1,540	.	0.5	1.4
Jan-18-2011	141	11.3	7.7	3,490	.	0.7	1.8
Jan-25-2011	20	11.1	7.7	2,160	.	0.5	2.0
Feb-01-2011	4	10.7	7.9	2,130	.	<0.4	2.0
Feb-08-2011	5	10.1	7.8	2,180	.	0.8	2.1
Feb-15-2011	25	12.1	7.8	2,070	.	0.8	2.0
Feb-22-2011	163	10.8	8.3	1,440	.	0.7	1.4

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

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

See Table 28 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
Dec-07-2010	157	11.8	7.7	1,990	6.8	2.4
Dec-14-2010	144	13.4	7.5	2,150	7.1	2.5
Dec-21-2010	339	10.8	7.7	1,770	4.8	2.2
Dec-28-2010	208	10.4	7.7	2,160	4.9	2.7
Jan-04-2011	406	8.5	7.9	1,950	6.1	2.7
Jan-11-2011	297	7.2	7.8	1,830	3.9	2.0
Jan-18-2011	165	11.3	7.7	4,500	6.2	3.1
Jan-25-2011	36	11.0	7.7	2,740	4.8	3.4
Feb-01-2011	40	10.6	7.8	2,700	4.7	3.2
Feb-08-2011	42	10.3	7.9	3,120	13.1	4.2
Feb-15-2011	48	12.3	7.8	2,860	12.3	3.8
Feb-22-2011	206	10.7	7.9	1,990	9.0	2.8

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

See Table 28 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
Dec-09-2010	.	7.8	2,030	19	6.7	1.9
Dec-13-2010	.	7.9	2,030	23	5.9	2.0
Dec-28-2010	.	8.1	2,020	15	5.0	2.3
Jan-11-2011	.	8.6	1,840	15	4.0	1.8
Jan-18-2011	.	8.1	2,490	13	6.8	2.5
Jan-25-2011	.	8.1	2,930	23	5.2	2.9
Feb-01-2011	.	7.7	2,770	23	4.8	2.9
Feb-08-2011	.	7.5	3,360	25	14.7	4.1
Feb-15-2011	.	7.8	2,950	36	12.1	3.6
Feb-15-2011	.	7.8	2,950	36	12.1	3.6

Table 11. Weekly water quality monitoring at Station F (Salt Slough at Lander Avenue).

See Table 28 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
Dec-07-2010	161	11.1	7.6	1,360	0.5	0.8
Dec-14-2010	128	13.3	7.2	1,640	0.6	0.9
Dec-21-2010	247	10.9	7.6	1,280	0.7	1.0
Dec-28-2010	230	10.3	7.2	1,620	0.4	1.1
Jan-04-2011	228	8.1	7.3	1,590	0.5	1.0
Jan-11-2011	211	6.9	7.1	1,680	0.5	1.0
Jan-18-2011	191	11.4	7.3	3,390	0.4	1.0
Jan-25-2011	135	10.7	7.4	2,030	<0.4	1.0
Feb-01-2011	133	10.6	7.8	1,460	0.5	0.7
Feb-08-2011	132	10.4	7.1	1,300	<0.4	0.7
Feb-15-2011	136	12.0	7.5	1,360	0.7	0.7
Feb-22-2011	220	10.8	8.0	1,090	0.9	0.9

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

See Table 28 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
Dec-06-2010	10	.	.	520	1.1	0.3
Dec-13-2010	10	.	.	660	1.6	0.4
Dec-20-2010	0	.	.	460	1.2	0.3
Dec-27-2010	0	.	.	520	1.6	0.3
Jan-03-2011	0	.	.	590	1.9	0.4
Jan-10-2011	10	.	.	180	0.5	0.1
Jan-17-2011	10	.	.	220	0.8	0.1
Jan-24-2011	10	.	.	70	<0.4	0.03
Jan-31-2011	10	.	.	70	<0.4	0.02
Feb-07-2011	10	.	.	430	3.6	0.4
Feb-14-2011	20	.	.	420	1.2	0.3
Feb-21-2011	20	.	.	480	2.3	0.3
Feb-28-2011	20	.	.	490	1.7	0.3

Table 13. Weekly water quality monitoring at Station K (Agatha Canal).

See Table 28 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	.	.	Specific Conductance	Selenium (total)	Boron
						CVRWQCB
						µg/L
Dec-06-2010	40	.	.	580	1	0.3
Dec-13-2010	60	.	.	690	1.5	0.4
Dec-20-2010	0	.	.	490	1.4	0.4
Dec-27-2010	30	.	.	1,000	0.9	1.6
Jan-03-2011	30	.	.	630	1.5	0.6
Jan-10-2011	80	.	.	330	0.7	N/A
Jan-17-2011	80	.	.	210	0.7	0.2
Jan-24-2011	50	.	.	140	<0.4	0.1
Jan-31-2011	80	.	.	100	<0.4	0.1
Feb-07-2011	80	.	.	130	<0.4	0.08
Feb-14-2011	80	.	.	380	0.9	0.2
Feb-21-2011	60	.	.	520	2.0	0.5
Feb-28-2011	40	.	.	510	1.6	0.4

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 28 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	.	.	Specific Conductance	Selenium (total)	Boron
						CVRWQCB
						µg/L
Dec-06-2010	NA	.	.	980	0.8	1.1
Dec-13-2010	NA	.	.	870	0.7	1.0
Dec-20-2010	NA	.	.	430	0.8	0.6
Dec-27-2010	NA	.	.	330	0.4	0.4
Jan-03-2011	NA	.	.	320	0.6	0.4
Jan-10-2011	NA	.	.	900	1.3	0.6
Jan-17-2011	NA	.	.	800	3.6	0.7
Jan-24-2011	NA	.	.	590	1.0	0.6
Jan-31-2011	NA	.	.	170	<0.4	0.1
Feb-07-2011	NA	.	.	1,160	0.5	1.5
Feb-14-2011	NA	.	.	1,490	4.2	1.3
Feb-21-2011	NA	.	.	1,330	1.9	1.6
Feb-28-2011	NA	.	.	650	2.0	0.5

Table 15. Weekly water quality monitoring at Station M2 (Santa Fe Canal at weir).

See Table 28 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
Dec-06-2010	NA	.	.	1,100	0.8	1.2
Dec-13-2010	NA	.	.	1,210	0.8	1.3
Dec-20-2010	NA	.	.	1,020	1.1	1.2
Dec-27-2010	NA	.	.	1,400	0.6	1.8
Jan-03-2011	NA	.	.	1,470	0.7	1.8
Jan-10-2011	NA	.	.	1,140	0.8	1.2
Jan-17-2011	NA	.	.	1,080	2	1.2
Jan-24-2011	NA	.	.	1,150	<0.4	1.6
Jan-31-2011	NA	.	.	1,120	0.4	1.3
Feb-07-2011	NA	.	.	1,170	<0.4	1.5
Feb-14-2011	NA	.	.	1,150	1.1	1.4
Feb-21-2011	NA	.	.	1,300	1.7	1.7
Feb-28-2011	NA	.	.	1,500	1.1	2.0

Table 16. Weekly water quality monitoring at Central California Irrigation District Main Canal at Russell Avenue (MER510).

See Table 28 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
Dec-06-2010	.	.	.	660	1.4	0.4
Dec-13-2010	.	.	.	720	1.4	0.5
Dec-20-2010	.	.	.	450	1.3	0.3
Dec-27-2010	.	.	.	600	2.3	0.4
Jan-03-2011	.	.	.	650	2.7	0.4
Jan-10-2011	.	.	.	230	0.7	0.2
Jan-17-2011	.	.	.	180	0.7	0.1
Jan-24-2011	.	.	.	140	<0.4	0.0
Jan-31-2011	.	.	.	70	<0.4	0.09
Feb-07-2011	.	.	.	190	1.1	0.2
Feb-14-2011	.	.	.	440	1.0	0.2
Feb-21-2011	.	.	.	470	2.1	0.3
Feb-28-2011	.	.	.	400	1.9	0.3

Table 17. Weekly water quality monitoring at Station G (San Joaquin River at Fremont Ford).

See Table 28 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
Dec-07-2010	260	11.3	7.4	1,320	0.5	0.6
Dec-14-2010	217	13.2	7.3	1,660	0.5	0.7
Dec-21-2010	1,380	11.1	7.3	350	0.5	0.1
Dec-28-2010	1,800	10.0	8.0	460	<0.4	0.2
Jan-04-2011	6,830	8.3	8.1	230	NA	0.1
Jan-11-2011	6,950	6.9	8.7	200	NA	0.0
Jan-18-2011	4,780	10.2	7.8	240	NA	0.1
Jan-25-2011	1,830	9.5	7.5	420	NA	0.1
Feb-01-2011	960	9.6	7.5	830	<0.4	0.3
Feb-08-2011	570	10.9	7.2	1,480	<0.4	0.5
Feb-15-2011	493	12.3	7.3	1,520	0.7	0.6
Feb-22-2011	2,590	11	7.7	390	<0.4	0.2

Table 18. Weekly water quality monitoring at Station H1 (Above Newman WW (previously SJR at Hills Ferry)).

(Collected data intended for use with biological monitoring.)

See Table 28 for explanation of footnotes and agency abbreviations.

PARAMETER	-	-	-	Conductance	Selenium (total)	Boron
DATA SOURCE	-	-	-	SLDMWA	SLDMWA	SLDMWA
UNITS	-	-	-	µS/cm	µg/L	mg/L
Dec-01-2010	.	.	.	1,680	1.0	1.1
Dec-08-2010	.	.	.	1,720	2.4	1.1
Dec-14-2010	.	.	.	1,920	2.5	1.3
Dec-22-2010	.	.	.	1,720	2.7	1.1
Dec-29-2010	.	.	.	1,690	2.1	1.1
Jan-05-2011	.	.	.	487	0.7	0.3
Jan-12-2011	.	.	.	499	0.8	0.4
Jan-26-2011	.	.	.	430	0.5	0.3
Feb-02-2011	.	.	.	1,220	0.9	0.7
Feb-09-2011	.	.	.	1,690	2.4	1.0
Feb-16-2011	.	.	.	1,720	2.7	1.1
Feb-23-2011	.	.	.	911	1.6	0.6

Table 19. Weekly water quality monitoring at Station H2 (San Joaquin River at Hills Ferry).

(Collected data intended for use with biological monitoring.)

See Table 28 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	-	-	Specific Conductance	Selenium (total)	Boron
DATA SOURCE	USGS	-	-	SLDMWA	SLDMWA	SLDMWA
UNITS	cfs	-	-	µS/cm	µg/L	mg/L
Dec-02-2010	312	.	.	1,530	<0.4	0.9
Dec-08-2010	271	.	.	1,720	2.2	1.1
Jan-05-2011	7,640	.	.	481	0.8	0.3
Jan-12-2011	6,720	.	.	496	0.9	0.3
Jan-26-2011	1,730	.	.	671	0.5	0.4
Feb-02-2011	880	.	.	675	0.5	0.4
Feb-09-2011	550	.	.	675	<0.4	0.4
Feb-16-2011	515	.	.	1,190	1.7	0.8
Feb-23-2011	2,200	.	.	878	1.4	0.6

Table 20. Weekly water quality monitoring at Station N (San Joaquin River at Crow's Landing).

See Table 28 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
Dec-07-2010	793	11.8	7.8	1,220	1.8	0.9
Dec-14-2010	769	13.4	7.6	1,350	1.3	0.9
Dec-21-2010	2,660	11.5	7.5	480	0.7	0.3
Dec-28-2010	4,350	10.4	7.7	410	0.5	0.3
Jan-04-2011	7,500	8.8	7.8	390	0.5	0.2
Jan-11-2011	8,150	7.5	7.6	360	<0.4	0.2
Jan-18-2011	5,740	10.3	7.4	390	0.5	0.2
Jan-25-2011	3,010	9.9	7.4	660	<0.4	0.4
Feb-01-2011	4,240	9.5	7.5	450	0.6	0.2
Feb-08-2011	4,140	10.3	7.6	450	<0.4	0.2
Feb-15-2011	4,020	11.1	7.6	460	0.5	0.2
Feb-22-2011	6,220	10.4	7.7	430	0.7	0.3

Table 21. Summary of fathead minnow (*Pimephales promelas*) larvae survival in 7-day tests using water samples collected from March 2010 to February 2011. Each value is the mean of 4 replicates with 10 fish in each replicate.

See Table 28 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	%	%	%	%	%	%
Mar-2010	98	95	95	100	98	100
Apr-2010	95	98	100	100	100	98
May-2010	95	93	98	85	90	95
Jun-2010	100	100	100	98	95	98
Jul-2010	95	98	100	100	100	93
Aug-2010	98	98	98	98	93	95
Sep-2010	95	93	100	100	100	95
Oct-2010	95	100	100	100	100	100
Nov-2010	95	100	83	98	100	100
Dec-2010	98	95	95	100	98	100
Jan-2011	88	95	100	98	90	100
Feb-2011	93	95	100	100	93	100

Table 22. Summary of fathead minnow (*Pimephales promelas*) larvae growth in 7-day tests using water samples collected from March 2010 to February 2011. Each value is the mean of 4 replicates with 10 fish in each replicate.

See Table 28 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
Mar-2010	0.41	0.48	0.48	0.46	0.40	0.45
Apr-2010	0.53	0.48	0.53	0.50	0.43	0.48
May-2010	0.35	0.34	0.36	0.39	0.37	0.37
Jun-2010	0.37	0.34	0.35	0.35	0.37	0.38
Jul-2010	0.35*	0.37	0.39	0.37	0.41	0.41
Aug-2010	0.32	0.28	0.33	0.33	0.26	0.35
Sep-2010	0.41	0.43	0.39	0.41	0.41	0.38
Oct-2010	0.38	0.43	0.42	0.39	0.37	0.33
Nov-2010	0.46	0.47	0.43	0.47	0.42	0.35
Dec-2010	0.39	0.40	0.46	0.44	0.39	0.39
Jan-2011	0.37	0.38	0.41	0.38	0.35	0.38
Feb-2011	0.46	0.34*	0.44	0.42	0.40	0.32

Table 23. Summary of *Daphnia magna* survival in 7-day tests using water samples collected from March 2010 to February 2011. Each value is the mean of 10 replicates with 1 animal in each replicate.

See Table 28 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	%	%	%	%	%	%
Mar-2010	90	100	90	80	90	90
Apr-2010	70	90	90	80	40†	80
May-2010	80	70	100	100	90	80
Jun-2010	100	100	100	90	90	100
Jul-2010	90	100	90	90	100	100
Aug-2010	100	100	100	100	90	50†
Sep-2010	100	100	90	100	88	90
Oct-2010	80	100	90	100	100	100
Nov-2010	90	90	100	80	100	80
Dec-2010	90	80	70	80	90	80
Jan-2011	100	90	90	100	90	90
Feb-2011	90	90	100	90	100	90

Table 24. Summary of *Daphnia magna* reproduction in 7-day tests using water samples collected from March 2010 to February 2011. Each value is the mean of 10 replicates with 1 animal in each replicate.

See Table 28 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					
Mar-2010	23.6	28.4	23.3	19.5	25.0	16.6
Apr-2010	34.8	41.4	39.2	24.1	20.1	28.5
May-2010	30.6	45.4	39.3	42.9	33.8	19.4
Jun-2010	23.0	27.2	29.5	24.2	23.1	21.4
Jul-2010	43.6	48.8	46.3	46.6	38.7	38.6
Aug-2010	27.7	31.8	28.4	25.8	26.1	2.6†††
Sep-2010	35.5	29.8	30.0	28.1	24.3	20.0
Oct-2010	28.1	23.7	30.0	29.2	29.9	25.2
Nov-2010	40.7	27.2	36.3	30.1	31.6	28.8
Dec-2010	31.5	30.5	26.2	33.6	25.6	34.2
Jan-2011	40.8	35.9	37.4	42.7	31.6	38.5
Feb-2011	25.7	26.4	24.4	26.8	25.5	22.1

Table 25. Summary of *Selenastrum capricornutum* growth in 4-day tests using water samples collected from March 2010 to February 2011. Each value is the mean of 4 replicates.

See Table 28 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^{3} cells/mL	10^{3} cells/mL	10^{3} cells/mL	10^{3} cells/mL	10^{3} cells/mL	10 ³ cells/mL
Mar-2010	17.6	28.4	27.8	27.4	19.5	15.5
Apr-2010	5.2*	22.2	25.1	33.2	26.3	24.7
May-2010	12.8	23.5	23.2	26.4	15.0	11.3
Jun-2010	17.7	29.6	24.8	33.0	22.7	22.0
Jul-2010	17.6	25.3	18.8	19.7	17.6	16.1
Aug-2010	19.6	25.0	21.8	28.8	21.4	22.3
Sep-2010	22.6	28.9	26.3	29.1	25.1	25.2
Oct-2010	27.6	34.4	38.0	29.0	25.6	21.2
Nov-2010	18.2*	29.0	33.4	28.3	26.5	26.7
Dec-2010	12.4*	28.5	29.8	24.8	19.7	20.3
Jan-2011	23.5	30.2	33.0	30.9	24.5	28.7
Feb-2011	20.9*	31.3	30.3	25.4	26.9	27.6

Table 26. Summary of selenium concentrations in grab water samples collected at study stations for use in laboratory toxicity tests, December 2010 to February 2011.

See Table 28 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
Dec-13-2010	38	0.4	5.1	0.4	0.4
Dec-15-2010	33	0.4	4.5	0.4	0.5
Dec-17-2010	30	NA	4.0	0.4	<0.4
Jan-10-2011	39	0.5	3.7	<0.4	<0.4
Jan-12-2011	43	0.5	4.8	<0.4	<0.4
Jan-14-2011	40	0.5	4.0	<0.4	<0.4
Feb-07-2011	38	<0.4	11	<0.4	<0.4
Feb-09-2011	59	<0.4	14	<0.4	<0.4
Feb-11-2011	60	<0.4	13	<0.4	<0.4
Feb-14-2011	44	<0.4	12	0.6	<0.4

Table 27. Summary of total suspended solids concentrations in grab water samples collected at study stations for use in laboratory toxicity tests, December 2010 to February 2011.

See Table 28 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
Dec-15-2010	27	54	26	62	13
Dec-17-2010	37	NA	25	44	17
Jan-10-2011	38	32	44	23	17
Jan-12-2011	52	34	42	26	17
Jan-14-2011	56	41	55	60	16
Feb-07-2011	54	32	43	84	17
Feb-09-2011	68	44	51	61	17
Feb-11-2011	69	47	59	68	19
Feb-14-2011	54	48	53	64	10

Table 28. 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