

GRASSLAND BYPASS PROJECT

MONTHLY DATA REPORT

November 2005

March 14, 2006

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 2005.

See Table 27 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Specific Conductance
DATA SOURCE	SLDMWA	SLDMWA
UNITS	cfs	µS/cm
Nov-01-2005	12	5,150
Nov-02-2005	13	5,120
Nov-03-2005	13	5,100
Nov-04-2005	13	5,080
Nov-05-2005	13	5,180
Nov-06-2005	13	5,280
Nov-07-2005	14	5,240
Nov-08-2005	14	5,240
Nov-09-2005	14	5,280
Nov-10-2005	11	4,610
Nov-11-2005	11	4,700
Nov-12-2005	16	4,840
Nov-13-2005	15	4,570
Nov-14-2005	14	4,710
Nov-15-2005	14	5,000
Nov-16-2005	13	4,990
Nov-17-2005	14	5,010
Nov-18-2005	16	4,760
Nov-19-2005	15	4,570
Nov-20-2005	17	4,640
Nov-21-2005	20	4,530
Nov-22-2005	17	4,770
Nov-23-2005	17	5,130
Nov-24-2005	16	5,320
Nov-25-2005	16	5,310
Nov-26-2005	15	5,300
Nov-27-2005	15	5,330
Nov-28-2005	16	5,010
Nov-29-2005	12	4,760
Nov-30-2005	11	4,820
.	.	.
Mean	14	4,980

Table 2a. Continuous water monitoring at Stations B and B2 (San Luis Drain Terminus), November 2005.

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*	USGS	CVRWQCB	CVRWQCB	CVRWQCB	Computed
UNITS	cfs	°C	mg/L	µS/cm	µg/L	lbs
Nov-01-2005	21	17.3	6.8	4,580	55.3	6.1
Nov-02-2005	20	17.5	7.3	4,780	63.8	6.9
Nov-03-2005	20	16.5	7.2	4,700	57.6	6.3
Nov-04-2005	21	16.6	NA	4,630	51.6	5.7
Nov-05-2005	20	16.3	NA	4,540	50.6	5.6
Nov-06-2005	21	16.2	NA	4,460	48.8	5.4
Nov-07-2005	21	16.3	NA	4,440	46.6	5.2
Nov-08-2005	20	15.7	NA	4,480	47.8	5.2
Nov-09-2005	21	15.4	NA	4,520	49.4	5.6
Nov-10-2005	21	15.7	NA	4,490	48.7	5.6
Nov-11-2005	20	15.6	NA	4,550	50.2	5.4
Nov-12-2005	19	15.5	NA	4,650	58.2	6.1
Nov-13-2005	22	15.1	NA	4,310	56.0	6.8
Nov-14-2005	22	15.4	NA	4,640	56.4	6.7
Nov-15-2005	21	15.6	NA	4,770	44.6	5.1
Nov-16-2005	21	15.7	NA	4,080	28.5	3.3
Nov-17-2005	21	15.5	NA	4,190	30.5	3.5
Nov-18-2005	21	15.3	6.9	4,340	41.2	4.7
Nov-19-2005	23	15.2	6.0	4,160	41.4	5.2
Nov-20-2005	23	14.8	6.4	4,230	45.9	5.7
Nov-21-2005	24	14.5	7.0	4,430	49.7	6.5
Nov-22-2005	27	14.2	6.9	4,420	41.4	5.9
Nov-23-2005	26	14.2	6.8	4,470	46.8	6.4
Nov-24-2005	25	14.1	6.4	4,230	44.2	5.9
Nov-25-2005	25	14.1	6.5	4,340	46.7	6.2
Nov-26-2005	23	12.8	6.6	4,300	55.4	6.9
Nov-27-2005	24	10.8	6.0	4,180	51.2	6.5
Nov-28-2005	24	10.4	6.5	4,340	55.4	7.3
Nov-29-2005	24	11.2	7.3	4,580	58.4	7.6
Nov-30-2005	21	11.6	7.4	4,700	60.2	6.9
.
Mean	22	14.8	6.8	4,450	49.4	5.9
Total Acre-feet	1,310					
Total (lbs)						176

Load Limitation for November 2005 (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.

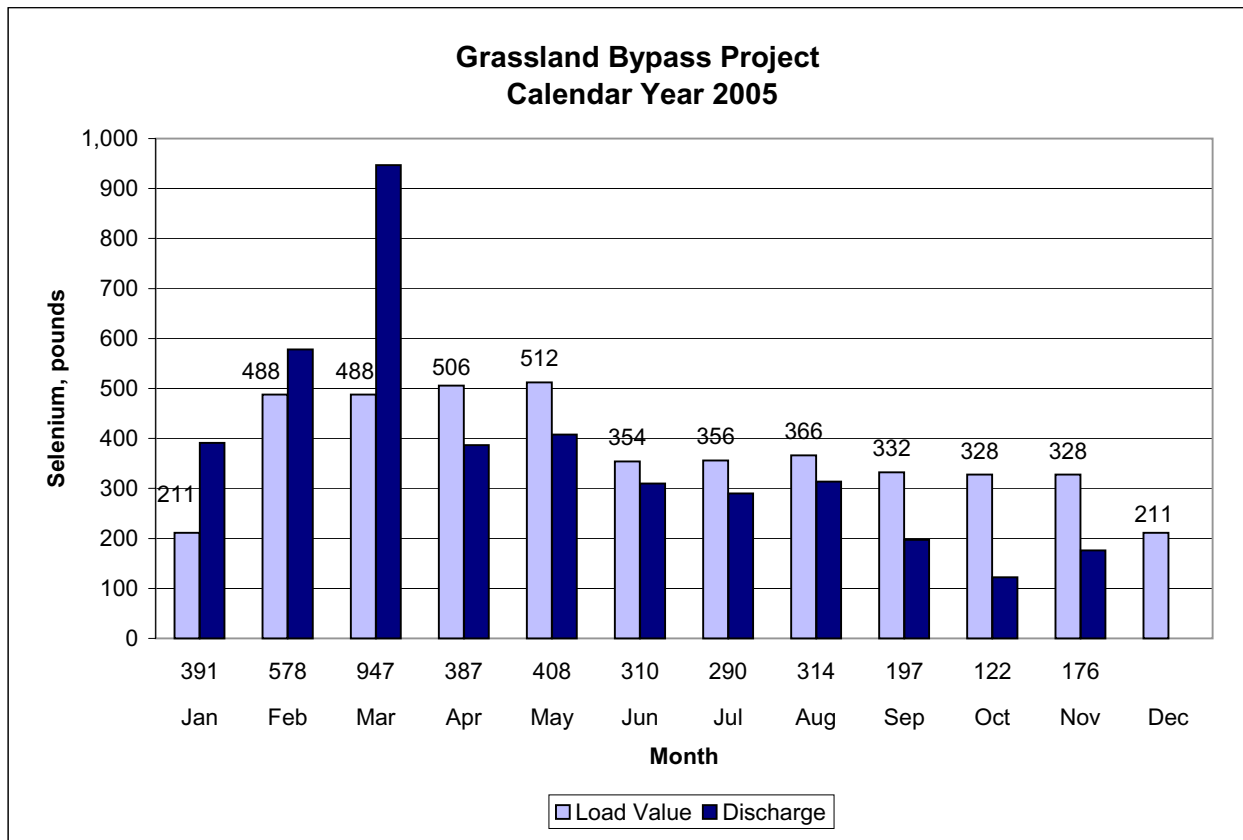


Table 3. Continuous water monitoring at Station D (Mud Slough North downstream of drainage discharges), November 2005.

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-01-2005	168	17.0	1,560
Nov-02-2005	172	17.1	1,530
Nov-03-2005	176	15.8	1,550
Nov-04-2005	176	16.1	1,530
Nov-05-2005	175	15.6	1,540
Nov-06-2005	168	15.6	1,600
Nov-07-2005	166	15.8	1,610
Nov-08-2005	162	15.3	1,640
Nov-09-2005	155	15.0	1,710
Nov-10-2005	155	15.5	1,720
Nov-11-2005	156	15.2	1,680
Nov-12-2005	163	15.2	1,640
Nov-13-2005	175	14.5	1,660
Nov-14-2005	182	14.9	1,640
Nov-15-2005	176	15.1	1,690
Nov-16-2005	175	15.0	1,610
Nov-17-2005	172	14.9	1,620
Nov-18-2005	171	14.7	1,690
Nov-19-2005	175	14.5	1,670
Nov-20-2005	186	14.1	1,630
Nov-21-2005	186	13.8	1,690
Nov-22-2005	180	13.6	1,780
Nov-23-2005	179	13.7	1,780
Nov-24-2005	182	13.5	1,710
Nov-25-2005	190	13.8	1,690
Nov-26-2005	186	12.3	1,730
Nov-27-2005	180	10.0	1,720
Nov-28-2005	171	9.6	1,830
Nov-29-2005	176	10.8	1,850
Nov-30-2005	184	11.4	1,800
.	.	.	.
Mean	174	14.3	1,670

Table 4. Continuous water monitoring at Station F (Salt Slough at Highway 165), November 2005.

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-01-2005	163	16.4	1,230
Nov-02-2005	165	16.5	1,250
Nov-03-2005	163	15.5	1,250
Nov-04-2005	159	15.7	1,270
Nov-05-2005	156	15.3	1,300
Nov-06-2005	162	15.0	1,300
Nov-07-2005	164	15.2	1,260
Nov-08-2005	168	15.1	1,260
Nov-09-2005	164	15.0	1,260
Nov-10-2005	150	15.2	1,300
Nov-11-2005	140	14.8	1,330
Nov-12-2005	143	14.7	1,330
Nov-13-2005	151	14.1	1,300
Nov-14-2005	157	14.5	1,290
Nov-15-2005	167	14.5	1,260
Nov-16-2005	182	14.3	1,220
Nov-17-2005	185	14.1	1,210
Nov-18-2005	179	13.9	1,250
Nov-19-2005	196	13.4	1,200
Nov-20-2005	192	13.0	1,230
Nov-21-2005	184	12.8	1,290
Nov-22-2005	185	12.6	1,300
Nov-23-2005	181	12.7	1,280
Nov-24-2005	182	12.6	1,300
Nov-25-2005	194	13.0	1,260
Nov-26-2005	215	12.1	1,220
Nov-27-2005	223	10.2	1,250
Nov-28-2005	222	9.6	1,250
Nov-29-2005	224	10.4	1,260
Nov-30-2005	234	11.2	1,250
.	.	.	.
Mean	178	13.8	1,270

Table 5. Continuous water monitoring at Station N (San Joaquin River at Crow's Landing), November 2005.

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-01-2005	1,070	16.0	NA	NA
Nov-02-2005	1,020	16.1	NA	NA
Nov-03-2005	915	15.5	NA	NA
Nov-04-2005	916	15.7	NA	NA
Nov-05-2005	892	15.4	NA	NA
Nov-06-2005	853	15.4	NA	NA
Nov-07-2005	844	15.5	NA	NA
Nov-08-2005	849	15.2	NA	NA
Nov-09-2005	827	15.0	NA	NA
Nov-10-2005	793	15.3	NA	NA
Nov-11-2005	782	15.2	1,060	1.4
Nov-12-2005	758	15.1	1,060	1.4
Nov-13-2005	729	14.5	1,100	1.0
Nov-14-2005	754	14.6	1,120	1.6
Nov-15-2005	762	14.7	1,090	1.6
Nov-16-2005	774	14.5	1,110	1.6
Nov-17-2005	738	14.3	1,050	1.2
Nov-18-2005	712	14.1	1,110	0.9
Nov-19-2005	686	13.8	1,150	1.1
Nov-20-2005	721	13.4	1,170	1.3
Nov-21-2005	731	13.0	1,140	1.3
Nov-22-2005	751	12.8	1,130	1.4
Nov-23-2005	738	12.9	1,190	NA
Nov-24-2005	748	12.8	1,230	NA
Nov-25-2005	761	13.1	1,210	NA
Nov-26-2005	787	12.2	1,170	NA
Nov-27-2005	808	10.4	1,150	NA
Nov-28-2005	811	9.9	1,120	NA
Nov-29-2005	809	10.7	1,150	NA
Nov-30-2005	786	11.4	1,140	NA
.
Mean	800	14.0	1,130	1.3

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-07-2005	28	.	.	5,070	P	.	.	.
Sep-14-2005	23	.	.	4,520	26	.	.	.
Sep-21-2005	32	.	.	4,400	P	.	.	.
Sep-28-2005	14	.	.	5,510	36	.	.	.
Oct-05-2005	14	.	.	6,140	18	.	.	.
Oct-12-2005	9	.	.	5,200	12	.	.	.
Oct-19-2005	15	.	.	4,690	71	.	.	.
Oct-26-2005	14	.	.	5,630	78	.	.	.
Nov-02-2005	13	.	.	5,160	50	.	.	.
Nov-09-2005	14	.	.	6,110	59	.	.	.
Nov-16-2005	13	.	.	5,240	43	.	.	.
Nov-22-2005	17	.	.	5,090	54	.	.	.
Nov-30-2005	11	.	.	4,930	35	.	.	.

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-02-2005	45	.	.	4,420	.	44.4	.	7.9
Sep-06-2005	32	.	.	4,420	.	45.2	.	8.0
Sep-13-2005	26	.	.	4,120	.	44.6	.	6.3
Sep-20-2005	25	.	.	4,490	.	50.3	.	7.0
Sep-27-2005	15	.	.	4,820	.	59.0	.	P
Oct-04-2005	13	.	.	5,760	.	62.0	.	11.0
Oct-11-2005	9	.	.	5,410	.	59.2	.	9.7
Oct-18-2005	15	.	.	4,560	.	46.4	.	7.5
Oct-25-2005	13	.	.	5,440	.	75.2	.	9.3
Nov-01-2005	12	.	.	5,580	.	86.2	.	9.6
Nov-08-2005	14	.	.	5,390	.	86.6	.	10.0
Nov-15-2005	14	.	.	5,030	.	68.2	.	7.7
Nov-21-2005	20	.	.	4,960	.	71.2	.	8.3
Nov-28-2005	16	.	.	5,160	.	84.5	.	8.2

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-01-2005	47	24.0	7.6	4,600	34	46.2	8.4
Sep-08-2005	30	23.1	8.4	4,910	P	48.4	8.4
Sep-15-2005	26	20.5	7.6	3,850	47	36.7	5.9
Sep-22-2005	32	22.6	8.3	4,130	39	46.4	6.9
Sep-29-2005	17	21.2	7.9	4,250	40	43.6	P
Oct-06-2005	19	17.9	8.0	4,640	44	37.0	6.9
Oct-13-2005	18	19.2	7.1	4,760	46	41.7	8.3
Oct-20-2005	22	18.0	8.4	3,650	53	25.1	5.3
Oct-27-2005	21	18.3	8.1	4,220	41	37.2	6.1
Nov-03-2005	20	15.7	8.3	4,640	51	52.3	6.8
Nov-10-2005	21	15.1	7.6	4,460	37	49.0	6.9
Nov-17-2005	21	14.8	7.8	4,220	30	31.8	5.7
Nov-22-2005	27	14.0	7.9	4,430	32	43.4	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
Sep-01-2005	24	21.9	8.0	874	.	0.5	0.9
Sep-08-2005	16	21.8	8.1	784	.	0.6	0.5
Sep-15-2005	36	19.3	7.9	652	.	<0.4	0.4
Sep-22-2005	24	22.4	8.0	854	.	<0.4	0.6
Sep-29-2005	36	20.1	7.8	872	.	<0.4	P
Oct-06-2005	-1	17.0	7.8	771	.	<0.4	0.6
Oct-13-2005	35	18.5	7.9	808	.	<0.4	0.6
Oct-20-2005	172	18.2	7.7	864	.	<0.4	0.6
Oct-27-2005	32	17.2	7.5	1,020	.	<0.4	0.8
Nov-03-2005	156	14.8	7.6	1,030	.	<0.4	0.7
Nov-10-2005	134	14.7	7.7	1,190	.	0.5	0.9
Nov-17-2005	151	14.4	7.8	1,210	.	<0.4	0.8
Nov-22-2005	153	13.5	6.9	1,240	.	0.4	0.9

** 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-01-2005	71	22.9	7.9	3,050	27.0	5.0
Sep-08-2005	46	22.0	8.0	2,970	22.7	4.6
Sep-15-2005	62	19.6	7.9	1,930	12.8	2.4
Sep-22-2005	56	22.1	8.0	2,700	21.2	3.8
Sep-29-2005	53	20.3	8.0	2,160	15.0	P
Oct-06-2005	98	17.1	7.7	1,550	7.1	1.8
Oct-13-2005	152	18.5	7.9	1,370	5.8	1.6
Oct-20-2005	194	18.1	7.6	1,260	3.6	1.3
Oct-27-2005	181	17.3	7.3	1,430	4.0	1.4
Nov-03-2005	176	14.9	7.6	1,540	7.2	1.5
Nov-10-2005	155	14.8	7.6	1,710	6.9	1.7
Nov-17-2005	172	14.3	7.7	1,620	3.6	1.4
Nov-22-2005	180	13.6	7.4	1,770	6.4	1.7

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-07-2005	.	8.2	2,540	47	17.0	4.0
Sep-13-2005	.	8.2	2,180	94	16.5	3.3
Sep-20-2005	.	8.1	1,870	20	10.4	2.5
Sep-27-2005	.	8.1	2,140	17	18.4	2.8
Oct-04-2005	.	7.8	1,980	16	8.3	2.4
Oct-12-2005	.	7.5	1,440	18	5.4	1.6
Oct-20-2005	.	7.7	1,360	21	3.7	1.3
Oct-28-2005	.	7.7	1,620	11	5.7	1.6
Nov-01-2005	.	7.7	1,660	13	6.2	1.8
Nov-10-2005	.	7.8	1,970	12	5.9	2.0
Nov-17-2005	.	7.5	1,760	12	3.3	1.8
Nov-22-2005	.	7.8	1,940	15	5.9	2.0

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-01-2005	154	22.8	7.7	962	0.6	0.5
Sep-08-2005	143	21.3	7.9	1,020	0.7	0.4
Sep-15-2005	148	19.1	7.9	925	0.6	0.4
Sep-22-2005	174	21.3	7.8	833	0.5	0.5
Sep-29-2005	103	19.9	7.7	1,100	0.5	P
Oct-06-2005	87	16.1	6.5	1,070	<0.4	0.6
Oct-13-2005	118	18.0	7.4	1,150	<0.4	0.6
Oct-20-2005	135	17.1	7.8	1,010	<0.4	0.6
Oct-27-2005	180	16.9	7.4	1,060	0.5	0.7
Nov-03-2005	163	14.5	7.6	1,210	0.4	0.6
Nov-10-2005	150	14.6	7.7	1,280	0.6	0.7
Nov-17-2005	185	13.3	7.8	1,180	<0.4	0.5
Nov-22-2005	185	12.1	7.7	1,090	0.4	0.7

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

See Table 27 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	.	.	Specific Conductance	Selenium (total)	Boron
DATA SOURCE	SLDMWA ^{††}	.	.	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	.	.	µS/cm	µg/L	mg/L
Sep-07-2005	55	.	.	480	1.0	0.3
Sep-14-2005	55	.	.	417	0.6	0.3
Sep-21-2005	80	.	.	418	0.5	0.3
Sep-28-2005	165	.	.	419	0.7	0.2
Oct-05-2005	200	.	.	368	<0.4	0.2
Oct-12-2005	200	.	.	387	<0.4	0.2
Oct-19-2005	200	.	.	386	2.3	0.2
Oct-26-2005	200	.	.	442	0.5	0.2
Nov-02-2005	30	.	.	466	0.8	0.3
Nov-09-2005	30	.	.	461	0.7	0.3
Nov-16-2005	30	.	.	511	0.7	0.2
Nov-22-2005	30	.	.	622	0.5	0.3
Nov-30-2005	30	.	.	699	0.8	0.3

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-07-2005	90	.	.	409	1.1	0.2
Sep-14-2005	120	.	.	415	0.8	0.2
Sep-21-2005	120	.	.	447	0.5	0.3
Sep-28-2005	200	.	.	400	0.5	0.2
Oct-05-2005	220	.	.	363	0.5	0.2
Oct-12-2005	205	.	.	398	0.5	0.2
Oct-19-2005	120	.	.	399	0.5	0.2
Oct-26-2005	80	.	.	457	0.5	0.3
Nov-02-2005	80	.	.	438	0.6	0.2
Nov-09-2005	60	.	.	437	0.7	0.3
Nov-16-2005	70	.	.	486	0.7	0.2
Nov-22-2005	70	.	.	621	0.6	0.3
Nov-30-2005	70	.	.	636	0.7	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
Sep-07-2005	145	.	.	667	1.3	0.5
Sep-14-2005	145	.	.	498	0.9	0.4
Sep-21-2005	145	.	.	471	0.6	0.3
Sep-28-2005	160	.	.	504	0.7	0.3
Oct-05-2005	160	.	.	427	0.7	0.2
Oct-12-2005	135	.	.	389	<0.4	0.2
Oct-19-2005	50	.	.	400	0.5	0.2
Oct-26-2005	0	.	.	500	0.6	0.3
Nov-02-2005	0	.	.	1,300	1.4	1.6
Nov-09-2005	0	.	.	1,150	1.1	1.4
Nov-16-2005	0	.	.	1,020	0.8	0.9
Nov-22-2005	0	.	.	1,130	0.9	0.9
Nov-30-2005	0	.	.	1,430	2.1	1.7

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-07-2005	0	.	.	919	1.0	0.8
Sep-14-2005	1	.	.	784	1.0	0.7
Sep-21-2005	63	.	.	640	1.0	0.5
Sep-28-2005	68	.	.	561	0.7	0.4
Oct-05-2005	69	.	.	521	0.6	0.3
Oct-12-2005	60	.	.	553	0.5	0.4
Oct-19-2005	60	.	.	635	0.5	0.5
Oct-26-2005	130	.	.	800	0.5	0.7
Nov-02-2005	130	.	.	830	0.6	0.7
Nov-09-2005	92	.	.	921	0.6	0.9
Nov-16-2005	87	.	.	882	0.6	0.7
Nov-22-2005	84	.	.	925	0.6	0.8
Nov-30-2005	99	.	.	974	0.4	0.8

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-07-2005	.	.	.	395	1.0	0.2
Sep-14-2005	.	.	.	409	0.7	0.2
Sep-21-2005	.	.	.	444	0.6	0.2
Sep-28-2005	.	.	.	466	0.6	0.2
Oct-05-2005	.	.	.	365	<0.4	0.2
Oct-12-2005	.	.	.	372	0.7	0.2
Oct-19-2005	.	.	.	390	0.5	0.2
Oct-26-2005	.	.	.	409	0.5	0.2
Nov-02-2005	.	.	.	424	0.5	0.2
Nov-09-2005	.	.	.	446	0.8	0.2
Nov-16-2005	.	.	.	548	0.9	0.2
Nov-22-2005	.	.	.	757	0.8	0.3
Nov-30-2005	.	.	.	773	1.5	0.4

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-01-2005	203	23.2	7.9	1,010	0.5	0.5
Sep-08-2005	193	22.4	7.2	1,040	0.7	0.4
Sep-15-2005	188	19.8	7.3	970	0.5	0.4
Sep-22-2005	218	22.1	7.1	771	<0.4	0.4
Sep-29-2005	160	20.5	7.4	1,090	0.5	P
Oct-06-2005	162	17.0	7.2	997	<0.4	0.4
Oct-13-2005	162	18.1	7.8	1,150	<0.4	0.5
Oct-20-2005	159	17.6	7.8	1,090	<0.4	0.5
Oct-27-2005	223	17.1	7.2	952	0.4	0.6
Nov-03-2005	232	14.6	7.8	1,100	<0.4	0.5
Nov-10-2005	207	14.6	7.2	1,230	0.4	0.6
Nov-17-2005	229	13.6	7.3	1,150	0.5	0.5
Nov-22-2005	226	11.5	7.7	1,250	<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
Sep-13-2005	.	.	.	NA	5.0	1.4
Sep-27-2005	.	.	.	NA	3.4	1.0
Oct-04-2005	.	.	.	NA	2.6	1.0
Oct-11-2005	.	.	.	NA	2.0	0.8
Oct-18-2005	.	.	.	NA	2.1	1.0
Oct-25-2005	.	.	.	NA	1.3	0.7
Nov-01-2005	.	.	.	NA	2.4	1.0
Nov-08-2005	.	.	.	NA	2.3	1.1
Nov-15-2005	.	.	.	NA	2.8	1.1
Nov-23-2005	.	.	.	NA	3.0	1.2
Nov-29-2005	.	.	.	NA	2.7	1.1

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-01-2005	1,020	22.5	7.8	822	2.4	0.7
Sep-08-2005	1010	21.4	7.5	690	1.4	0.4
Sep-15-2005	1,290	18.8	7.6	474	1.1	0.3
Sep-22-2005	1,340	20.5	7.6	496	0.9	0.3
Sep-29-2005	1,290	19.0	7.6	479	0.9	P
Oct-06-2005	779	17.6	7.4	870	1.2	0.5
Oct-13-2005	917	18.5	8.1	692	1.0	0.4
Oct-20-2005	1,010	17.9	7.7	706	0.9	0.4
Oct-27-2005	1,010	17.2	7.6	751	0.9	0.5
Nov-03-2005	915	15.0	7.7	910	1.3	0.5
Nov-10-2005	793	14.9	7.5	1,030	1.6	0.6
Nov-17-2005	738	14.2	7.6	1,080	1.3	0.6
Nov-22-2005	751	12.1	7.6	1,130	1.6	0.8

Table 20. Summary of fathead minnow (*Pimephales promelas*) larvae survival in 7-day tests using water samples collected from December 2004 to November 2005. 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-2004	100	68*	75*	98	98	100
Jan-2005	98	85	80	100	100	98
Feb-2005	95	88	98	80	90	98
Mar-2005	88	73	93	83	85	73†
Apr-2005	95	100	95	93	100	90
May-2005	100	98	93	100	83	98
Jun-2005	100	93	98	95	90	95
Jul-2005	98	100	95	98	80	93
Aug-2005	93	95	95	95	100	98
Sep-2005	100	100	100	98	93	95
Oct-2005	90	93	98	100	90	100
Nov-2006	98	95	90	98	95	98

Table 21. Summary of fathead minnow (*Pimephales promelas*) larvae growth in 7-day tests using water samples collected from December 2004 to November 2005. 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-2004	0.58	0.47	0.53	0.66	0.54	0.48
Jan-2005	0.62	0.57	0.51	0.61	0.54	0.46
Feb-2005	0.76	0.62	0.69	0.63	0.62	0.54
Mar-2005	0.41	0.38	0.49	0.44	0.46	0.35
Apr-2005	0.42	0.40	0.44	0.42	0.38	0.29
May-2005	0.40	0.46	0.39	0.43	0.29	0.42
Jun-2005	0.51	0.50	0.50	0.50	0.47	0.36
Jul-2005	0.39	0.39	0.35	0.33	0.35	0.39
Aug-2005	0.52	0.56	0.60	0.51	0.48	0.42
Sep-2005	0.54	0.04	0.45	0.45	0.42	0.38
Oct-2005	0.38	0.41	0.41	0.36	0.39	0.40
Nov-2006	0.31	0.32	0.30	0.29	0.31	0.31

Table 22. Summary of *Daphnia magna* survival in 7-day tests using water samples collected from December 2004 to November 2005. 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-2004	100	100	90	90	80	100
Jan-2005	100	90	80	100	100	90
Feb-2005	80	100	100	90	100	30†
Mar-2005	80	100	90	100	100	90
Apr-2005	90	90	100	90	90	100
May-2005	90	90	100	100	90	90
Jun-2005	90	90	80	90	80	100
Jul-2005	90	100	80	90	80	90
Aug-2005	100	100	100	80	80	70†
Sep-2005	90	90	100	80	20†	30†
Oct-2005	30*	80	78	100	90	80
Nov-2006	80	80	100	90	100	100

Table 23. Summary of *Daphnia magna* reproduction in 7-day tests using water samples collected from December 2004 to November 2005. 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-2004	30.8	30.8	32.8	34.4	26.6	31.1
Jan-2005	41.7	38.8	40.2	45.9	47.6	34.7
Feb-2005	15.2	13.6	17.3	8.5	12.2	4.0
Mar-2005	37.4	38.9	42.4	38.8	31.6	44.0
Apr-2005	26.4	35.9	42.3	37.1	30.4	27.0
May-2005	39.8	38.6	45.5	36.1	34.1	40.9
Jun-2005	41.8	35.1	36.8	42.5	30.7	31.9
Jul-2005	41.8	49.4	43.1	45.5	39.6	34.0
Aug-2005	29.3	36.1	32.5	29.4	22.1	21.0
Sep-2005	11.4	11.0	12.0	10.8	5.3†††	7.8†††
Oct-2005	11.7*	28.3	23.9	25.7	24.5	22.6
Nov-2006	17.8	16.1	16.7	15.7	16.9	17.0

Table 24. Summary of *Selenastrum capricornutum* growth in 4-day tests using water samples collected from December 2004 to November 2005. 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-2004	0.9*	10.4	12.2	23.4	3.5	15.6
Jan-2005	1.3*	12.7	10.6*	18.0	13.7	16.2
Feb-2005	13.7	17.7	19.5	10.7*	13.1	22.4
Mar-2005	14.9	20.1	19.7	20.7	11.5	16.0
Apr-2005	17.4	25.6	21.1	19.6	19.2	24.5
May-2005	24.0	23.5	24.5	19.7	16.1	30.4
Jun-2005	21.4	17.8	21.2	14.6	16.3	20.6
Jul-2005	10.0*	13.0	7.4*	7.7*	11.9	13.0
Aug-2005	6.1*	21.0	7.3*	22.9	16.7	18.2
Sep-2005	21.5	23.1	25.0	28.3	21.6	22.4
Oct-2005	18.3	14.8	17.1	17.4	9.1	17.5
Nov-2006	17.7	22.3	22.8	19.0	15.6	18.1

Table 25. Summary of selenium concentrations in grab water samples collected at study stations for use in laboratory toxicity tests, September 2005 to November 2005.

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-12-2005	47	<0.4	29	0.6	<0.4
Sep-14-2005	34	<0.4	10	0.5	<0.4
Sep-16-2005	45	0.5	14	0.6	0.4
Oct-10-2005	40	<0.4	4.5	<0.4	<0.4
Oct-12-2005	41	<0.4	5.1	<0.4	<0.4
Oct-14-2005	35	0.5	4.2	<0.4	<0.4
Nov-14-2005	55	<0.4	6.3	<0.4	<0.4
Nov-16-2005	27	<0.4	3.4	<0.4	<0.4
Nov-18-2005	40	<0.4	4.2	<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, September 2005 to November 2005.

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-12-2005	15	379	83	145	5
Sep-14-2005	7	63	121	64	5
Sep-16-2005	24	89	89	91	7
Oct-10-2005	60	22	34	14	14
Oct-12-2005	40	27	24	66	9
Oct-14-2005	62	23	20	42	7
Nov-14-2005	9	19	29	63	9
Nov-16-2005	33	16	31	71	11
Nov-18-2005	34	39	24	51	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.
†	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