

# GRASSLAND BYPASS PROJECT

## MONTHLY DATA REPORT

**August 2002**

November 04, 2002

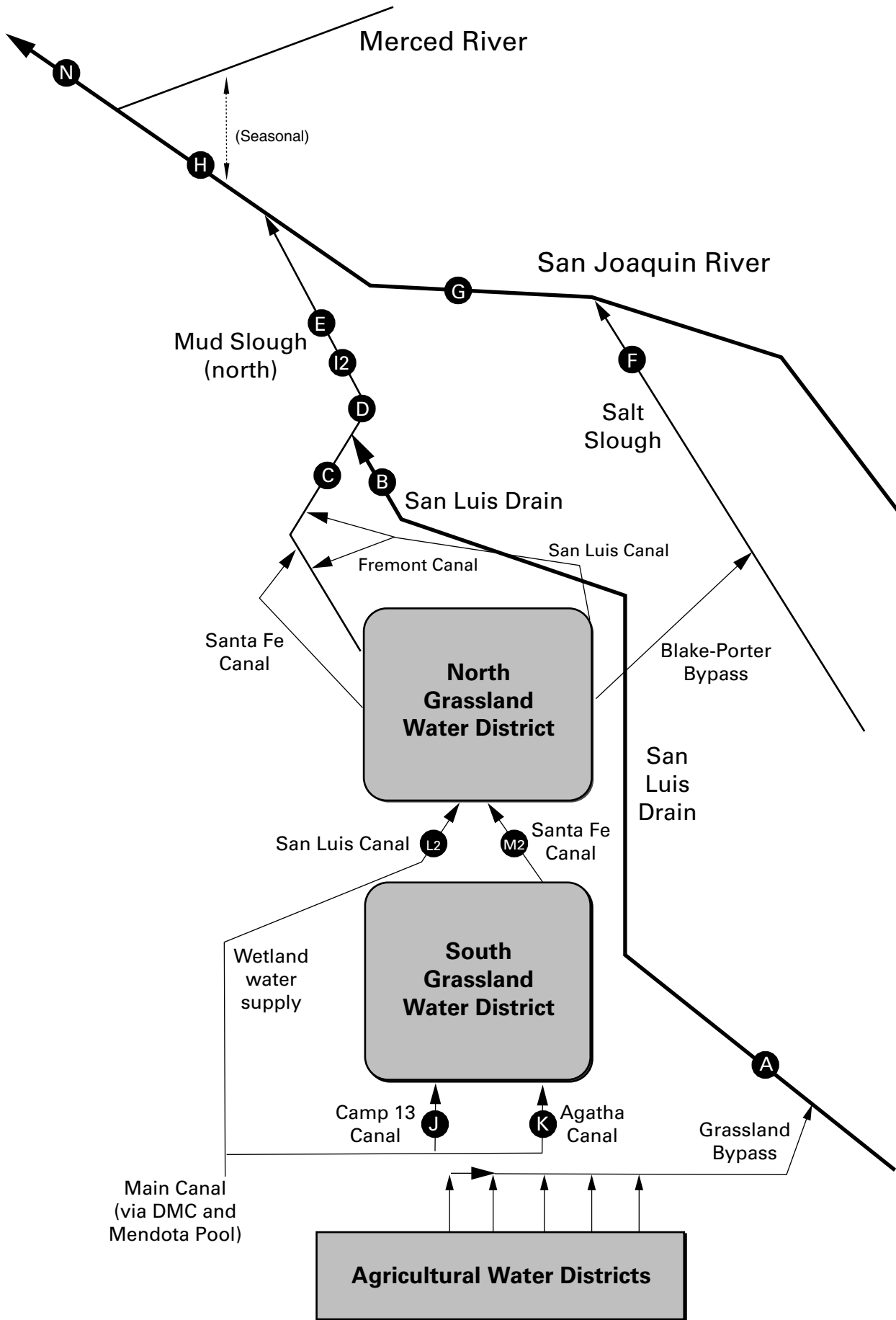
### Preliminary Results

A cooperative effort of:

U.S. Bureau of Reclamation  
Central Valley Regional Water Quality Control Board  
U.S. Fish and Wildlife Service  
California Department of Fish and Game  
San Luis & Delta-Mendota Water Authority  
U.S. Environmental Protection Agency  
U.S. Geological Survey

compiled by San Francisco Estuary Institute





## GRASSLAND BYPASS PROJECT

## MONTHLY DATA REPORT

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Table 1. Continuous water monitoring at Station A (inflow to San Luis Drain), August 2002.

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Specific Conductance
DATA SOURCE	SLDMWA	SLDMWA
UNITS	cfs	µS/cm
Aug-01-2002	56	3,860
Aug-02-2002	57	3,990
Aug-03-2002	57	3,900
Aug-04-2002	56	3,770
Aug-05-2002	57	3,970
Aug-06-2002	53	3,970
Aug-07-2002	55	3,680
Aug-08-2002	53	3,670
Aug-09-2002	51	3,670
Aug-10-2002	49	3,640
Aug-11-2002	54	3,570
Aug-12-2002	57	3,460
Aug-13-2002	61	3,480
Aug-14-2002	58	3,460
Aug-15-2002	63	3,310
Aug-16-2002	62	3,400
Aug-17-2002	60	3,370
Aug-18-2002	58	3,350
Aug-19-2002	57	3,510
Aug-20-2002	57	3,700
Aug-21-2002	55	3,550
Aug-22-2002	56	3,430
Aug-23-2002	56	3,350
Aug-24-2002	50	3,420
Aug-25-2002	52	3,390
Aug-26-2002	51	3,430
Aug-27-2002	46	3,490
Aug-28-2002	45	3,480
Aug-29-2002	42	3,530
Aug-30-2002	44	3,520
Aug-31-2002	46	3,570
Mean	54	3,580

Table 2a. Continuous water monitoring at Station B (discharge from San Luis Drain), August 2002.

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Temperature	Boron	Specific Conductance	Selenium (total)	Selenium (total) Load
DATA SOURCE	USGS	USGS	CVRWQCB	CVRWQCB	CVRWQCB	Computed
UNITS	cfs	°C	mg/L	µS/cm	µg/L	lbs
Aug-01-2002	49	26.5	P	3,660	25.3	6.7
Aug-02-2002	57	27.0	P	3,970	34.1	10.5
Aug-03-2002	57	26.6	P	4,060	33.5	10.3
Aug-04-2002	58	25.2	P	4,000	35.7	11.2
Aug-05-2002	59	24.8	P	4,200	41.5	13.2
Aug-06-2002	58	24.7	P	4,160	40.1	12.5
Aug-07-2002	55	24.5	P	3,940	39.0	11.6
Aug-08-2002	57	24.7	P	4,080	40.9	12.6
Aug-09-2002	55	25.5	P	4,070	39.6	11.7
Aug-10-2002	52	26.4	P	3,900	38.2	10.7
Aug-11-2002	51	26.7	P	3,760	35.1	9.7
Aug-12-2002	55	26.9	P	3,780	33.4	9.9
Aug-13-2002	58	27.3	P	3,820	32.7	10.2
Aug-14-2002	61	27.3	P	3,740	36.7	12.1
Aug-15-2002	60	27.3	P	3,540	33.0	10.7
Aug-16-2002	63	27.3	P	3,650	34.6	11.8
Aug-17-2002	62	26.7	P	3,640	31.1	10.4
Aug-18-2002	60	26.0	P	3,530	30.6	9.9
Aug-19-2002	58	25.6	P	3,580	32.6	10.2
Aug-20-2002	58	24.6	P	3,560	34.6	10.8
Aug-21-2002	58	23.9	P	3,600	35.7	11.2
Aug-22-2002	56	23.8	P	3,650	35.8	10.8
Aug-23-2002	58	23.2	P	3,890	42.3	13.2
Aug-24-2002	57	23.1	P	3,700	36.6	11.3
Aug-25-2002	53	23.5	P	3,650	31.8	9.1
Aug-26-2002	55	23.9	P	3,520	29.3	8.7
Aug-27-2002	52	24.2	P	3,520	31.7	8.9
Aug-28-2002	47	25.0	P	3,490	29.6	7.5
Aug-29-2002	47	25.1	P	3,450	33.8	8.6
Aug-30-2002	45	25.0	P	3,720	32.6	7.9
Aug-31-2002	46	25.3	P	3,710	31.8	7.9
Mean	55	25.4	P	3,760	34.6	
<b>Total Acre-feet</b>	<b>3,410</b>				<b>Total (lbs)</b>	<b>322</b>

<b>Load Limitation for August 2002</b>	<b>(lbs)</b>	<b>387</b>
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Figure 2b. Monthly selenium discharges from the terminus of the San Luis Drain into Mud Slough compared to load values.

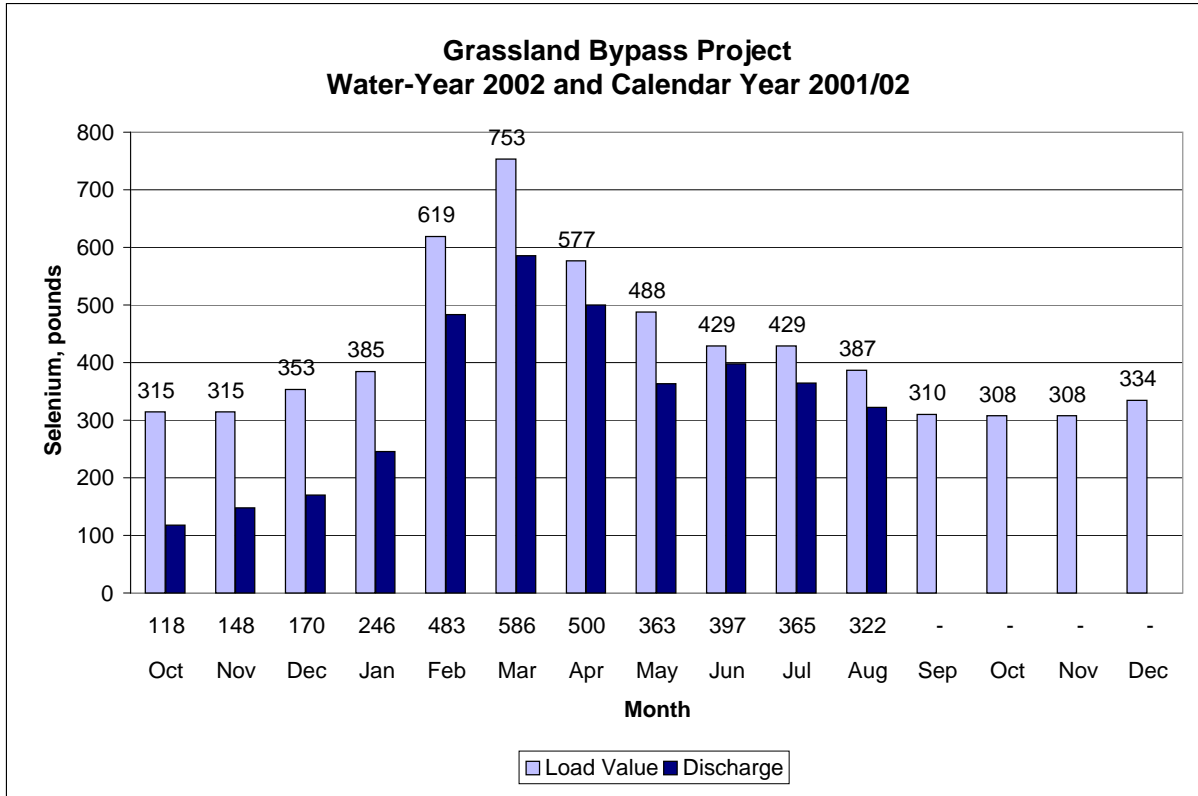


Table 2b. Monthly selenium discharges from the terminus of the San Luis Drain into Mud Slough compared to load values.

PARAMETER	Discharge	Load Value
UNITS	lbs	lbs
Oct	118	315
Nov	148	315
Dec	170	353
Jan	246	385
Feb	483	619
Mar	586	753
Apr	500	577
May	363	488
Jun	397	429
Jul	365	429
Aug	322	387
Sep	-	310
Oct	-	308
Nov	-	308
Dec	-	334

**Table 3. Continuous water monitoring at Station D  
(Mud Slough North downstream of drainage discharges), August 2002.**

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Temperature	Specific Conductance
DATA SOURCE	usgs	usgs	usgs
UNITS	cfs	°C	µS/cm
Aug-01-2002	59	26.5	2,910
Aug-02-2002	67	26.9	3,130
Aug-03-2002	66	26.4	3,260
Aug-04-2002	63	24.9	3,360
Aug-05-2002	74	24.4	3,290
Aug-06-2002	73	24.3	3,340
Aug-07-2002	54	24.1	3,630
Aug-08-2002	69	24.4	3,270
Aug-09-2002	52	25.1	3,750
Aug-10-2002	59	26.1	3,300
Aug-11-2002	51	26.3	3,400
Aug-12-2002	55	26.5	3,580
Aug-13-2002	67	26.8	3,360
Aug-14-2002	75	26.8	3,170
Aug-15-2002	61	26.9	3,380
Aug-16-2002	61	26.8	3,490
Aug-17-2002	65	26.3	3,420
Aug-18-2002	81	25.5	2,960
Aug-19-2002	90	25.2	2,650
Aug-20-2002	83	24.5	2,740
Aug-21-2002	89	23.8	2,640
Aug-22-2002	98	23.9	2,470
Aug-23-2002	100	23.3	2,620
Aug-24-2002	102	23.1	2,500
Aug-25-2002	99	23.4	2,380
Aug-26-2002	78	23.7	2,660
Aug-27-2002	64	24.0	2,890
Aug-28-2002	56	24.9	2,980
Aug-29-2002	53	25.0	3,030
Aug-30-2002	52	24.9	2,970
Aug-31-2002	53	25.2	3,070
Mean	70	25.2	3,080

Table 4. Continuous water monitoring at Station F (Salt Slough at Highway 165), August 2002.

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Temperature	Specific Conductance
DATA SOURCE	usgs	usgs	usgs
UNITS	cfs	°C	µS/cm
Aug-01-2002	149	26.2	783
Aug-02-2002	134	26.6	794
Aug-03-2002	135	25.7	785
Aug-04-2002	124	23.7	835
Aug-05-2002	152	23.7	847
Aug-06-2002	172	23.7	830
Aug-07-2002	162	23.6	823
Aug-08-2002	142	24.1	812
Aug-09-2002	144	25.1	870
Aug-10-2002	144	26.0	1,020
Aug-11-2002	138	26.2	1,000
Aug-12-2002	133	26.0	1,040
Aug-13-2002	127	26.4	1,070
Aug-14-2002	122	26.3	1,100
Aug-15-2002	131	26.3	1,040
Aug-16-2002	129	26.2	1,020
Aug-17-2002	135	25.3	1,020
Aug-18-2002	146	24.6	997
Aug-19-2002	169	24.3	996
Aug-20-2002	187	23.2	988
Aug-21-2002	169	23.1	1,080
Aug-22-2002	131	23.2	1,120
Aug-23-2002	123	22.6	1,130
Aug-24-2002	120	22.8	1,220
Aug-25-2002	123	23.3	1,210
Aug-26-2002	138	23.6	1,160
Aug-27-2002	134	24.0	1,200
Aug-28-2002	124	25.0	1,190
Aug-29-2002	104	24.4	1,290
Aug-30-2002	86	24.4	1,360
Aug-31-2002	82	25.1	1,440
Mean	136	24.7	1,030



**Table 5. Continuous water monitoring at Station N (San Joaquin River at Crow's Landing), August 2002.**

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Temperature	Specific Conductance	Selenium (total)
DATA SOURCE	USGS	USGS	CVRWOCB	CVRWOCB
UNITS	cfs	°C	µS/cm	µg/L
Aug-01-2002	436	26.1	1,270	2.8
Aug-02-2002	411	26.5	1,310	3.0
Aug-03-2002	387	26.4	1,510	3.5
Aug-04-2002	409	25.0	1,580	4.1
Aug-05-2002	436	24.2	1,510	4.2
Aug-06-2002	424	23.9	1,520	4.9
Aug-07-2002	443	23.9	1,450	5.0
Aug-08-2002	429	24.4	1,410	4.6
Aug-09-2002	400	25.3	1,510	4.9
Aug-10-2002	351	26.2	1,570	5.0
Aug-11-2002	366	26.5	1,630	5.6
Aug-12-2002	397	26.2	1,380	4.0
Aug-13-2002	346	26.7	1,450	4.3
Aug-14-2002	351	26.6	1,480	4.5
Aug-15-2002	342	26.6	1,630	4.9
Aug-16-2002	354	26.0	1,510	4.5
Aug-17-2002	374	25.6	1,480	4.6
Aug-18-2002	437	24.9	1,450	4.5
Aug-19-2002	475	24.8	1,330	3.9
Aug-20-2002	462	24.1	1,280	3.4
Aug-21-2002	425	23.8	1,360	3.8
Aug-22-2002	454	24.0	1,350	3.8
Aug-23-2002	406	23.5	1,400	3.8
Aug-24-2002	441	23.3	1,460	4.4
Aug-25-2002	430	23.7	1,510	5.6
Aug-26-2002	482	23.8	1,400	4.9
Aug-27-2002	455	24.2	1,300	3.1
Aug-28-2002	425	24.9	1,420	3.3
Aug-29-2002	394	24.9	1,390	3.4
Aug-30-2002	382	24.5	1,420	3.2
Aug-31-2002	351	25.0	1,470	3.7
Mean	409	25.0	1,440	4.2

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

See Table 26 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	.	.	.
Jun-05-2002	45	.	.	4,500	NA	.	.	.
Jun-12-2002	50	.	.	4,720	300	.	.	.
Jun-19-2002	68	.	.	4,210	270	.	.	.
Jun-26-2002	53	.	.	4,320	230	.	.	.
Jul-03-2002	59	.	.	4,030	240	.	.	.
Jul-10-2002	58	.	.	4,220	120	.	.	.
Jul-17-2002	54	.	.	4,080	P	.	.	.
Jul-24-2002	46	.	.	3,730	130	.	.	.
Jul-31-2002	46	.	.	3,920	100	.	.	.
Aug-07-2002	55	.	.	3,860	140	.	.	.
Aug-14-2002	58	.	.	3,470	110	.	.	.
Aug-21-2002	55	.	.	3,560	140	.	.	.
Aug-28-2002	45	.	.	3,670	P	.	.	.

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

See Table 26 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
Jun-04-2002	50	.	.	4,470	.	41.8	.	7.4
Jun-11-2002	52	.	.	4,530	.	41.4	.	7.4
Jun-18-2002	69	.	.	4,460	.	46.7	.	8.0
Jun-26-2002	53	.	.	4,260	.	45.0	.	7.2
Jul-08-2002	58	.	.	4,240	.	43.8	.	P
Jul-10-2002	58	.	.	4,370	.	44.4	.	7.0
Jul-16-2002	53	.	.	4,300	.	42.4	.	P
Jul-23-2002	49	.	.	3,980	.	33.2	.	P
Jul-30-2002	42	.	.	3,830	.	28.0	.	P
Aug-06-2002	53	.	.	4,110	.	39.2	.	6.9
Aug-13-2002	61	.	.	3,890	.	35.6	.	P
Aug-20-2002	57	.	.	3,620	.	31.6	.	P
Aug-27-2002	46	.	.	3,600	.	29.8	.	P

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

See Table 26 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
Jun-06-2002	48	24.9	8.3	4,500	P	37.0	.	7.6
Jun-13-2002	51	24.1	8.2	4,430	38	45.2	.	7.6
Jun-20-2002	66	25.1	8.5	4,010	54	44.8	.	6.8
Jun-27-2002	43	24.7	8.4	4,340	74	54.1	.	7.4
Jul-03-2002	63	26.7	8.1	4,310	53	45.0	.	7.5
Jul-11-2002	58	27.3	8.7	4,370	P	54.3	.	7.2
Jul-18-2002	54	24.9	8.6	4,260	49	41.9	.	P
Jul-25-2002	47	24.3	8.4	3,730	P	30.6	.	P
Aug-01-2002	49	25.1	8.6	3,610	59	24.4	.	P
Aug-08-2002	57	23.2	8.4	3,960	44	39.2	.	6.7
Aug-15-2002	60	25.3	8.3	3,600	42	35.3	.	P
Aug-22-2002	56	22.3	8.3	3,660	P	36.8	.	P
Aug-29-2002	47	22.4	7.3	3,420	P	33.7	.	P

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

See Table 26 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
Jun-06-2002	14	23.9	8.0	1,590	0.6	1.6
Jun-13-2002	7	25.2	8.3	1,960	<0.4	1.6
Jun-20-2002	36	23.8	8.5	1,190	0.7	0.9
Jun-27-2002	1	24.6	8.2	2,890	<0.4	2.4
Jul-03-2002	2	26.4	8.6	2,440	0.7	2.1
Jul-11-2002	7	29.8	8.3	1,620	0.7	1.5
Jul-18-2002	4	25.3	8.3	1,710	0.9	P
Jul-25-2002	36	24.0	7.9	853	1.0	P
Aug-01-2002	10	26.3	8.3	1,150	0.9	P
Aug-08-2002	12	23.8	8.7	1,250	1.2	1.2
Aug-15-2002	1	23.3	8.1	1,350	0.7	P
Aug-22-2002	42	21.9	7.8	785	0.7	P
Aug-29-2002	6	21.4	8.3	1,310	<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 26 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
Jun-06-2002	62	24.2	8.1	3,570	25.0	5.8
Jun-13-2002	58	24.5	8.4	4,060	35.7	6.4
Jun-20-2002	102	23.8	8.5	1,400	30.7	4.7
Jun-27-2002	44	25.2	8.6	4,220	46.1	7.3
Jul-03-2002	65	26.8	8.6	4,220	42.9	7.0
Jul-11-2002	65	27.5	8.6	3,840	42.6	6.0
Jul-18-2002	58	25.0	8.6	3,920	41.1	P
Jul-25-2002	83	24.2	8.3	2,540	16.6	P
Aug-01-2002	59	25.4	8.5	2,840	17.2	P
Aug-08-2002	69	22.3	8.6	3,290	29.7	5.4
Aug-15-2002	61	25.1	8.3	3,330	29.0	P
Aug-22-2002	98	22.2	8.2	2,460	20.3	P
Aug-29-2002	53	22.3	8.3	3,140	28.2	P

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

See Table 26 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
Jun-04-2002	.	8.7	3,940	13.0	26.4	5.3
Jun-10-2002	.	7.8	4,150	22.4	28.6	6.8
Jun-18-2002	.	NA	NA	NA	30.4	7.3
Jun-25-2002	.	7.9	2,990	26.8	20.2	6.2
Jul-02-2002	.	8.7	2,840	21.3	29.2	6.1
Jul-10-2002	.	9.0	1,930	23.3	24.0	6.0
Jul-16-2002	.	8.8	4,200	18.0	39.6	6.7
Jul-22-2002	.	9.1	3,500	32.5	21.4	5.0
Jul-30-2002	.	8.4	2,910	26.3	15.0	4.4
Aug-06-2002	.	8.5	3,590	20.1	29.0	5.8
Aug-13-2002	.	8.6	3,308	20.9	25.2	5.9
Aug-20-2002	.	8.4	2,567	27.5	22.7	4.4
Aug-30-2002	.	8.7	2,880	12.2	24.2	4.6

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

See Table 26 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
Jun-06-2002	98	24.4	7.7	1,220	0.5	0.5
Jun-13-2002	168	23.1	8.0	1,240	<0.4	0.6
Jun-20-2002	135	24.7	7.7	1,240	0.7	0.5
Jun-27-2002	174	23.5	7.7	1,020	0.5	0.5
Jul-03-2002	137	24.9	8.2	1,110	0.7	0.6
Jul-11-2002	122	27.4	7.7	1,340	0.6	0.8
Jul-18-2002	135	23.8	7.6	1,100	0.7	P
Jul-25-2002	152	23.4	7.6	960	0.5	P
Jul-30-2002	212	24.2	7.7	784	<0.4	P
Aug-01-2002	149	24.1	7.8	923	0.6	P
Aug-08-2002	142	22.3	7.8	896	0.5	0.5
Aug-15-2002	131	24.1	7.7	948	0.5	P
Aug-22-2002	131	21.1	7.7	1,110	0.6	P
Aug-29-2002	104	23.2	7.7	1,270	<0.4	P

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

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	.	.	Specific Conductance	Selenium (total)	Boron
DATA SOURCE	SLDMWA <sup>††</sup>	.	.	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	.	.	µS/cm	µg/L	mg/L
Jun-05-2002	0	.	.	844	1.3	P
Jun-12-2002	10	.	.	672	1.7	0.5
Jun-19-2002	0	.	.	768	1.7	0.7
Jun-26-2002	0	.	.	667	1.1	0.6
Jul-03-2002	5	.	.	428	1.3	0.3
Jul-10-2002	5	.	.	384	1.1	0.3
Jul-17-2002	5	.	.	435	1.1	P
Jul-24-2002	5	.	.	442	0.9	P
Jul-31-2002	10	.	.	505	1.0	P
Aug-07-2002	10	.	.	694	0.8	0.5
Aug-14-2002	5	.	.	774	0.8	P
Aug-21-2002	5	.	.	570	1.0	P
Aug-28-2002	15	.	.	598	0.8	P

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

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	.	.	Specific Conductance	Selenium (total)	Boron
DATA SOURCE	SLDMWA <sup>††</sup>	.	.	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	.	.	µS/cm	µg/L	mg/L
Jun-05-2002	30	.	.	646	1.0	P
Jun-12-2002	20	.	.	626	1.2	0.3
Jun-19-2002	20	.	.	496	1.0	0.2
Jun-26-2002	20	.	.	470	0.8	0.3
Jul-03-2002	20	.	.	362	1.0	0.2
Jul-10-2002	0	.	.	415	0.9	0.2
Jul-17-2002	10	.	.	486	1.0	P
Jul-24-2002	20	.	.	397	0.6	P
Jul-17-2002	10	.	.	487	1.1	P
Aug-07-2002	10	.	.	514	0.7	0.2
Aug-14-2002	10	.	.	558	0.8	P
Aug-21-2002	10	.	.	580	1.0	P
Aug-28-2002	20	.	.	570	0.6	P

Table 14. Weekly water quality monitoring at Station L2 (San Luis Canal at splits).

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	.	.	Specific Conductance	Selenium (total)	Boron
DATA SOURCE	SLDMWA <sup>11</sup>	.	.	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	.	.	µS/cm	µg/L	mg/L
Jun-05-2002	30	.	.	707	1.0	P
Jun-12-2002	85	.	.	646	0.8	0.4
Jun-19-2002	70	.	.	674	1.2	0.5
Jun-26-2002	50	.	.	604	1.0	0.4
Jul-03-2002	50	.	.	619	1.2	0.5
Jul-10-2002	0	.	.	844	1.3	0.7
Jul-17-2002	60	.	.	577	1.0	P
Jul-24-2002	0	.	.	892	1.3	P
Jul-31-2002	0	.	.	1,330	2.0	P
Aug-07-2002	0	.	.	1,470	2.2	1.3
Aug-14-2002	10	.	.	1,110	1.3	P
Aug-21-2002	10	.	.	1,100	1.5	P
Aug-28-2002	10	.	.	1,160	1.2	P

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

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	.	.	Specific Conductance	Selenium (total)	Boron
DATA SOURCE	SLDMWA <sup>11</sup>	.	.	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	.	.	µS/cm	µg/L	mg/L
Jun-05-2002	40	.	.	1,480	1.6	P
Jun-12-2002	13	.	.	1,260	0.7	1.5
Jun-19-2002	46	.	.	929	1.2	0.9
Jun-26-2002	36	.	.	1,300	1.2	1.5
Jul-03-2002	41	.	.	930	1.5	1.3
Jul-10-2002	56	.	.	1,300	1.5	2.3
Jul-17-2002	21	.	.	1,340	1.8	P
Jul-24-2002	86	.	.	917	1.1	P
Jul-31-2002	53	.	.	1,140	1.2	P
Aug-07-2002	62	.	.	1,350	1.4	2.1
Aug-14-2002	59	.	.	1,240	1.3	P
Aug-21-2002	88	.	.	1,240	1.4	P
Aug-28-2002	78	.	.	1,210	0.9	P

Table 16. Weekly water quality monitoring at Station G (San Joaquin River at Fremont Ford).

See Table 26 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
Jun-06-2002	150	24.7	7.9	1,420	0.5	0.5
Jun-13-2002	169	23.3	7.2	1,350	<0.4	0.6
Jun-20-2002	127	25.0	7.9	1,460	0.6	0.6
Jun-27-2002	196	24.2	7.7	1,110	0.5	0.5
Jul-03-2002	156	25.1	7.9	1,150	0.7	0.5
Jul-11-2002	140	27.2	7.9	1,300	0.6	0.6
Jul-18-2002	143	23.5	7.8	1,260	0.7	P
Jul-25-2002	186	23.9	7.8	1,100	0.5	P
Aug-01-2002	187	24.8	7.8	980	0.6	P
Aug-08-2002	167	21.9	7.8	1,160	0.8	0.5
Aug-15-2002	132	24.4	7.9	1,160	0.6	P
Aug-22-2002	168	21.9	7.8	1,200	0.6	P
Aug-29-2002	129	24.3	8.0	1,460	<0.4	P

Table 17. Weekly water quality monitoring at Station H (San Joaquin River at Hills Ferry).

(Collected data intended for use with biological monitoring.)

See Table 26 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
Jun-05-2002	.	.	.	1,900	6.5	1.4
Jun-11-2002	.	.	.	2,740	11.3	2.4
Jun-18-2002	.	.	.	2,470	12.8	2.1
Jun-25-2002	.	.	.	1,780	9.4	1.4
Jul-01-2002	.	.	.	1,800	8.1	1.5
Jul-09-2002	.	.	.	2,000	10.3	1.7
Jul-16-2002	.	.	.	2,040	9.4	1.9
Jul-23-2002	.	.	.	1,610	6.1	1.5
Jul-30-2002	.	.	.	1,340	1.2	3.8
Aug-06-2002	.	.	.	1,930	9.0	1.9
Aug-13-2002	.	.	.	1,950	7.7	1.9
Aug-20-2002	.	.	.	1,740	6.0	1.5
Aug-27-2002	.	.	.	1,830	6.0	1.8



Table 18. Weekly water quality monitoring at Station N (San Joaquin River at Crow's Landing).

See Table 26 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
Jun-06-2002	522	24.9	7.9	1,290	3.1	1.1
Jun-13-2002	459	22.6	7.8	1,470	3.4	1.3
Jun-20-2002	466	24.1	7.5	1,480	5.3	1.3
Jun-27-2002	501	25.2	8.2	1,320	4.9	1.2
Jul-03-2002	428	24.7	8.1	1,430	4.1	1.2
Jul-11-2002	372	26.7	8.1	1,550	5.7	1.3
Jul-18-2002	349	23.9	8.2	1,440	4.6	P
Jul-25-2002	430	23.8	8.0	1,220	3.5	P
Jul-30-2002	437	23.5	7.7	1,210	NA	P
Aug-01-2002	436	24.7	8.0	1,240	2.4	P
Aug-08-2002	429	22.8	8.1	1,400	4.1	1.2
Aug-15-2002	342	24.4	8.1	1,630	5.4	P
Aug-22-2002	454	22.3	7.9	1,270	3.7	P
Aug-29-2002	394	22.5	8.0	1,370	3.9	P

Table 19. Summary of fathead minnow (*Pimephales promelas*) larvae survival in 7-day tests using water samples collected from September 2001 to August 2002. Each value is the mean of 4 replicates with 10 fish in each replicate.

See Table 26 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	%	%	%	%	%	%
Sep-2001	98	100	90	100	100	98
Oct-2001	100	98	100	100	100	100
Nov-2001	98	83ε	60*	88	100	100
Dec-2001	98	55*	68*	90	98	100
Jan-2002	83	95	98	100	100	98
Feb-2002	93	90	93	95	93	100
Mar-2002	98	90	98	80	88	98
Apr-2002	93	93	85	95	95	98
May-2002	98	95	95	90	85	88
Jun-2002	98	100	100	95	95	100
Jul-2002	100	95	98	93	90	100
Aug-2002	85	88	95	90	95	98

Table 20. Summary of fathead minnow (*Pimephales promelas*) larvae growth in 7-day tests using water samples collected from September 2001 to August 2002. Each value is the mean of 4 replicates with 10 fish in each replicate.

See Table 26 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
Sep-2001	0.43	0.43	0.44	0.42	0.34	0.36
Oct-2001	0.63	0.71	0.78	0.65	0.66	0.58
Nov-2001	0.70	0.49	0.49	0.59	0.67	0.52
Dec-2001	0.48	0.34*	0.41	0.55	0.47	0.50
Jan-2002	0.39	0.41	0.44	0.51	0.44	0.40
Feb-2002	0.55	0.47	0.58	0.55	0.52	0.42
Mar-2002	0.40	0.47	0.50	0.41	0.43	0.48
Apr-2002	0.64	0.63	0.50	0.63	0.55	0.58
May-2002	0.63	0.70	0.62	0.65	0.61	0.56
Jun-2002	0.38	0.43	0.41	0.42	0.31	0.50
Jul-2002	0.31	0.33	0.34	0.35	0.31	0.34
Aug-2002	0.49*	0.49	0.49	0.58	0.57	0.55

Table 21. Summary of *Daphnia magna* survival in 7-day tests using water samples collected from September 2001 to August 2002. Each value is the mean of 10 replicates with 1 animal in each replicate.

See Table 26 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	%	%	%	%	%	%
Sep-2001	80	100	90	100	90	80
Oct-2001	90	100	90	90	70*†	90
Nov-2001	100	89	90	100	80	90
Dec-2001	90	100	90	90	100	100
Jan-2002	100	90	80	100	100	67†
Feb-2002	100	80	90	90	100	100
Mar-2002	90	100	100	100	90	100
Apr-2002	100	90	100	90	100	100
May-2002	80	100	80	100	89	30†
Jun-2002	100	90	90	90	100	90
Jul-2002	90	100	100	100	100	100
Aug-2002	100	90	100	60*	100	90

Table 22. Summary of *Daphnia magna* reproduction in 7-day tests using water samples collected from September 2001 to August 2002. Each value is the mean of 10 replicates with 1 animal in each replicate.

See Table 26 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
Sep-2001	27.7	31.5	32.5	31.5	25.6	20.7
Oct-2001	39.5	39.1	29.8	35.3	21.1	31.7
Nov-2001	27.4	28.2	34.2	33.4	25.4	29.6
Dec-2001	41.3	45.9	43.3	42.4	45.1	36.7
Jan-2002	29.4	29.3	23.6	30.5	30.1	11.9
Feb-2002	42.8( * )	37.7	42.0	40.6	47.4	32.4
Mar-2002	47.2	47.7	49.8	45.8	54.5	50.2
Apr-2002	56.2	43.4	59.8	49.3	49.5	47.3
May-2002	26.4	36.5	30.7	37.2	27.9	2.9†
Jun-2002	40.0	36.1	43.1	24.3*	45.3	28.6
Jul-2002	28.3	29.7	34.6	29.6	33.1	29.1
Aug-2002	40.8	26.6	34.1	20.4	25.6	22.9

(\*) Although reproduction values were less at Stations C, D, and F, they were not statistically different from the DMC water. This was due to the increased survival rate at Station B.

Table 23. Summary of *Selenastrum capricornutum* growth in 4-day tests using water samples collected from September 2001 to August 2002. Each value is the mean of 4 replicates.

See Table 26 for explanation of footnotes and agency abbreviations.

LOCATION	Station B	Station C	Station D	Station F	Delta Mendota Canal	Laboratory Control
DATA SOURCE	SLDMWA	SLDMWA	SLDMWA	SLDMWA	SLDMWA	SLDMWA
UNITS	10 <sup>5</sup> cells/mL	10 <sup>5</sup> cells/mL	10 <sup>5</sup> cells/mL	10 <sup>5</sup> cells/mL	10 <sup>5</sup> cells/mL	10 <sup>5</sup> cells/mL
Sep-2001	6.5*	13.0	11.3	12.3	10.8	9.6
Oct-2001	9.1	10.7	11.3	11.4	10.3	9.3
Nov-2001	6.0*	11.1	11.0	10.0	9.2 †††	6.4 †††
Dec-2001	7.5*	9.4	9.6	9.3	8.9 †††	9.1 †††
Jan-2002	6.3*†††	19.2	17.4	24.7	15.1	10.1
Feb-2002	8.7*	17.3	14.9*	12.7*	18.2	12.6
Mar-2002	8.7*	14.2*	12.9*	18.3	17.8	13.5
Apr-2002	1.44*	7.0	4.4*	6.6	5.8	33.0
May-2002	4.8 ‡	7.9	6.1	6.3	7.1 †††	3.8 ‡
Jun-2002	3.7*	9.5	7.7*	6.8*	11.7	10.2
Jul-2002	6.0	10.2	10.3	10.5	6.8	8.7
Aug-2002	NA	NA	NA	NA	NA	NA

**Table 24. Summary of selenium concentrations in grab water samples collected at study stations for use in laboratory toxicity tests, June 2002 to August 2002.**

See Table 26 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
Jun-24-2002	48	0.9	29	0.5	<0.4
Jun-26-2002	48	0.8	38	0.7	<0.4
Jun-28-2002	52	0.5	50	0.7	0.5
Jul-22-2002	30	0.5	22	0.5	0.5
Jul-24-2002	32	0.8	17	0.4	<0.4
Jul-26-2002	32	0.9	20	<0.4	<0.4
Aug-19-2002	28	0.7	21	0.5	<0.4
Aug-21-2002	34	0.7	26	0.6	<0.4
Aug-23-2002	45	0.7	26	0.5	<0.4

**Table 25. Summary of total suspended solids concentrations in grab water samples collected from June 2002 to August 2002.**

See Table 26 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
Jun-24-2002	52	36	46	119	72
Jun-26-2002	69	81	82	168	62
Jun-28-2002	57	34	47	159	43
Jul-22-2002	44	172	139	181	37
Jul-24-2002	55	167	147	210	39
Jul-26-2002	91	254	NA	153	58
Aug-19-2002	NA	NA	NA	NA	NA
Aug-21-2002	58	135	86	146	30
Aug-23-2002	61	79	71	155	36

Table 26. 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 <sup>6</sup> cell/mL) acceptability criteria.
‡	Control value exceeds suggested maximum variance (20%) acceptability criteria.
‡‡	Fungal growth observed on test organisms.
‡‡‡	Failed cell density requirement of 1E6 cells.
#	New testing laboratory with reporting limit of 0.4 µg/L as of June 1998.
❖	Based on definitive bioassay, NOEC is 50 percent

ε EPA Station C split sample results significantly different. See Table 19.

LOCATION	Station B	Station C	Station D	Station F	Delta Mendota Canal	Laboratory Control
DATA SOURCE	EPA	EPA	EPA	EPA	EPA	EPA
UNITS	%	%	%	%	%	%
Nov-2001	100	58	64	90	100	100