

GRASSLAND BYPASS PROJECT

MONTHLY DATA REPORT

June 2002

September 10, 2002

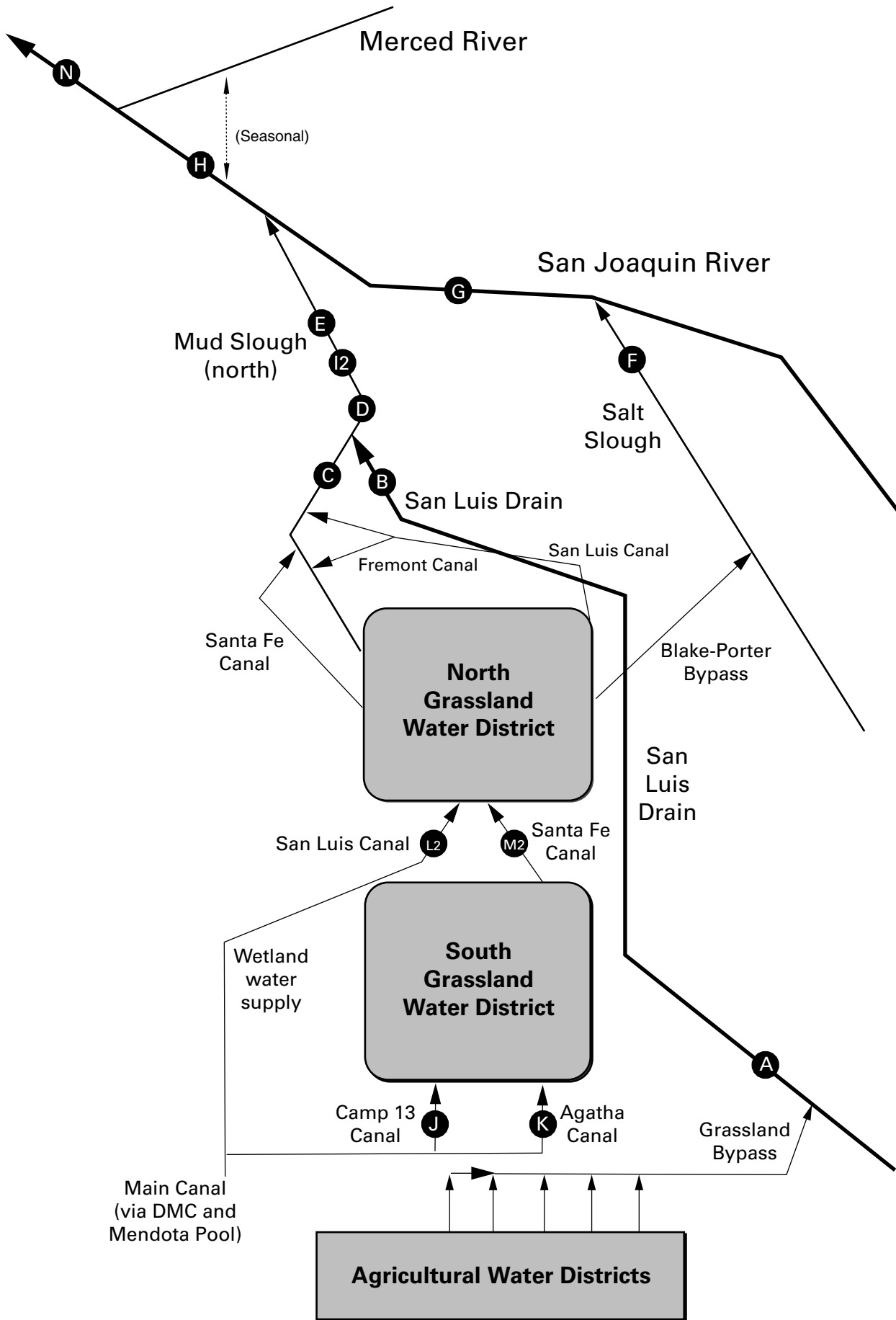
Preliminary Results

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





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MONTHLY DATA REPORT

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

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Specific Conductance
DATA SOURCE	SLDMWA	SLDMWA
UNITS	cfs	µS/cm
Jun-01-2002	49	4,290
Jun-02-2002	49	4,320
Jun-03-2002	48	4,310
Jun-04-2002	50	4,290
Jun-05-2002	45	4,350
Jun-06-2002	50	4,320
Jun-07-2002	47	4,180
Jun-08-2002	45	4,000
Jun-09-2002	47	4,060
Jun-10-2002	57	4,050
Jun-11-2002	52	4,450
Jun-12-2002	50	4,390
Jun-13-2002	54	4,420
Jun-14-2002	58	4,210
Jun-15-2002	61	4,100
Jun-16-2002	63	4,010
Jun-17-2002	70	4,060
Jun-18-2002	69	4,100
Jun-19-2002	68	4,070
Jun-20-2002	68	3,800
Jun-21-2002	67	3,820
Jun-22-2002	63	3,910
Jun-23-2002	60	4,070
Jun-24-2002	62	4,290
Jun-25-2002	61	4,260
Jun-26-2002	53	4,250
Jun-27-2002	45	4,240
Jun-28-2002	45	3,900
Jun-29-2002	46	4,240
Jun-30-2002	45	4,310
.	.	.
Mean	55	4,170

Table 2a. Continuous water monitoring at Station B (discharge from San Luis Drain), June 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
Jun-01-2002	55	25.7	7.5	4,190	35.4	10.5
Jun-02-2002	51	23.7	7.8	4,290	45.5	12.5
Jun-03-2002	51	23.3	8.0	4,340	41.1	11.3
Jun-04-2002	52	23.7	8.1	4,460	37.2	10.4
Jun-05-2002	52	25.2	8.4	4,620	42.5	11.9
Jun-06-2002	48	26.7	7.7	4,470	41.2	10.7
Jun-07-2002	51	26.8	8.0	4,620	39.2	10.8
Jun-08-2002	52	24.3	9.1	4,700	40.1	11.2
Jun-09-2002	56	NA	8.3	4,750	37.7	11.4
Jun-10-2002	51	21.0	8.1	4,680	40.0	11.0
Jun-11-2002	57	23.0	9.6	4,490	36.3	11.2
Jun-12-2002	53	24.2	8.1	4,420	38.4	11.0
Jun-13-2002	51	24.7	8.5	4,300	43.6	12.0
Jun-14-2002	55	24.6	7.8	4,590	45.4	13.5
Jun-15-2002	59	24.5	8.2	4,600	44.3	14.1
Jun-16-2002	62	24.7	8.8	4,660	48.9	16.4
Jun-17-2002	64	24.9	6.9	4,440	46.1	15.9
Jun-18-2002	69	25.4	7.9	4,290	40.5	15.1
Jun-19-2002	69	25.4	7.1	4,350	44.1	16.4
Jun-20-2002	66	25.3	6.9	4,130	42.2	15.0
Jun-21-2002	66	23.8	P	4,240	47.0	16.7
Jun-22-2002	66	22.8	P	4,250	49.2	17.5
Jun-23-2002	63	23.9	P	3,960	42.3	14.4
Jun-24-2002	60	24.8	P	4,120	47.9	15.5
Jun-25-2002	62	26.0	P	4,100	47.5	15.9
Jun-26-2002	54	26.8	P	4,360	49.0	14.3
Jun-27-2002	43	26.4	P	4,310	57.6	13.4
Jun-28-2002	46	26.2	P	4,390	53.9	13.4
Jun-29-2002	45	26.2	P	4,320	50.2	12.2
Jun-30-2002	47	26.5	P	4,290	47.6	12.1
Mean	56	24.8	P	4,390	44.1	
Total Acre-feet	3,320				Total (lbs)	397

Load Limitation for June 2002	(lbs)	429
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Figure 2b. Monthly selenium discharges from the terminus of the San Luis Drain into Mud Slough compared to load values.

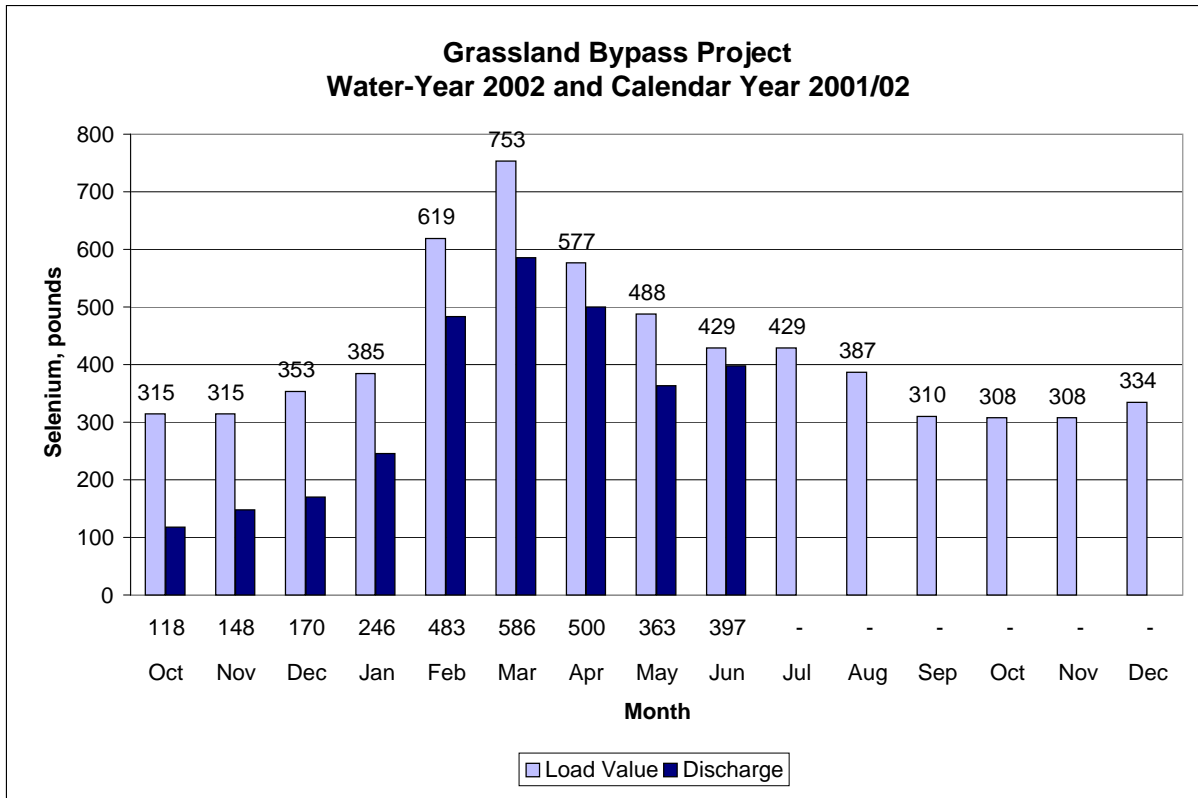


Table 2b. Monthly selenium discharges from the terminus of the San Luis Drain into Mud Slough compared to load values.

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	-	429
Aug	-	387
Sep	-	310
Oct	-	308
Nov	-	308
Dec	-	334

**Table 3. Continuous water monitoring at Station D
(Mud Slough North downstream of drainage discharges), June 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
Jun-01-2002	65	25.4	3,670
Jun-02-2002	76	23.7	3,290
Jun-03-2002	83	23.7	3,050
Jun-04-2002	76	24.1	3,260
Jun-05-2002	70	25.4	3,490
Jun-06-2002	62	26.3	3,530
Jun-07-2002	60	26.0	3,720
Jun-08-2002	55	23.4	3,880
Jun-09-2002	58	19.7	3,900
Jun-10-2002	60	20.7	3,880
Jun-11-2002	65	22.9	3,890
Jun-12-2002	62	24.2	3,740
Jun-13-2002	58	24.7	3,830
Jun-14-2002	65	24.5	3,690
Jun-15-2002	71	24.4	3,780
Jun-16-2002	70	24.5	4,000
Jun-17-2002	77	24.7	3,790
Jun-18-2002	97	25.3	3,460
Jun-19-2002	96	25.5	3,450
Jun-20-2002	102	25.4	3,190
Jun-21-2002	98	24.1	3,190
Jun-22-2002	94	23.4	3,290
Jun-23-2002	93	24.2	3,090
Jun-24-2002	93	24.8	2,960
Jun-25-2002	84	26.0	3,290
Jun-26-2002	64	26.8	3,690
Jun-27-2002	44	26.7	4,070
Jun-28-2002	50	26.8	3,950
Jun-29-2002	60	26.5	3,420
Jun-30-2002	59	26.9	3,480
.	.	.	.
Mean	72	24.7	3,560

Table 4. Continuous water monitoring at Station F (Salt Slough at Highway 165), June 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
Jun-01-2002	73	24.2	1,400
Jun-02-2002	108	21.6	1,200
Jun-03-2002	162	21.7	986
Jun-04-2002	167	23.0	1,000
Jun-05-2002	138	25.2	1,020
Jun-06-2002	98	26.2	1,210
Jun-07-2002	87	25.3	1,360
Jun-08-2002	94	22.1	1,400
Jun-09-2002	94	18.7	1,430
Jun-10-2002	104	20.0	1,430
Jun-11-2002	144	22.3	1,250
Jun-12-2002	158	23.3	1,230
Jun-13-2002	168	23.1	1,230
Jun-14-2002	164	22.4	1,270
Jun-15-2002	158	22.3	1,320
Jun-16-2002	152	22.7	1,310
Jun-17-2002	138	22.7	1,310
Jun-18-2002	136	23.5	1,270
Jun-19-2002	131	23.8	1,230
Jun-20-2002	135	23.4	1,270
Jun-21-2002	130	21.1	1,290
Jun-22-2002	140	NA	1,230
Jun-23-2002	148	NA	1,190
Jun-24-2002	186	NA	1,090
Jun-25-2002	181	NA	1,080
Jun-26-2002	181	NA	1,080
Jun-27-2002	174	NA	1,140
Jun-28-2002	167	NA	1,130
Jun-29-2002	158	NA	1,150
Jun-30-2002	161	NA	1,150
.	.	.	.
Mean	141	22.8	1,220

Table 5. Continuous water monitoring at Station N (San Joaquin River at Crow's Landing), June 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
Jun-01-2002	493	26.2	1,620	3.7
Jun-02-2002	515	24.6	1,530	3.6
Jun-03-2002	559	24.2	1,460	3.0
Jun-04-2002	577	24.9	1,260	3.4
Jun-05-2002	567	26.3	1,170	2.8
Jun-06-2002	522	26.8	1,290	2.8
Jun-07-2002	489	25.7	1,420	3.2
Jun-08-2002	468	NA	1,530	3.1
Jun-09-2002	466	NA	1,540	3.3
Jun-10-2002	485	21.0	1,480	3.1
Jun-11-2002	464	23.9	1,420	3.0
Jun-12-2002	459	25.2	1,550	3.7
Jun-13-2002	459	25.5	1,500	4.0
Jun-14-2002	483	24.6	1,440	4.1
Jun-15-2002	499	24.6	1,370	4.6
Jun-16-2002	511	24.7	1,410	5.0
Jun-17-2002	527	24.6	1,410	5.0
Jun-18-2002	485	25.5	1,500	5.7
Jun-19-2002	477	26.0	1,560	6.0
Jun-20-2002	466	26.0	1,560	6.0
Jun-21-2002	462	25.7	1,530	6.3
Jun-22-2002	460	25.1	1,560	6.2
Jun-23-2002	488	25.4	1,550	6.2
Jun-24-2002	480	25.5	1,410	5.2
Jun-25-2002	471	26.6	1,390	4.6
Jun-26-2002	498	27.1	1,290	4.7
Jun-27-2002	501	26.8	1,310	4.7
Jun-28-2002	482	26.9	1,340	4.3
Jun-29-2002	481	26.8	1,350	4.7
Jun-30-2002	478	NA	1,380	4.9
.
Mean	492	25.4	1,440	4.4

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	.	.	.
Apr-03-2002	35	.	.	5,470	P	.	.	.
Apr-10-2002	34	.	.	5,360	50	.	.	.
Apr-17-2002	45	.	.	4,450	66	.	.	.
Apr-24-2002	43	.	.	4,870	P	.	.	.
May-01-2002	42	.	.	4,800	130	.	.	.
May-08-2002	35	.	.	4,990	P	.	.	.
May-15-2002	34	.	.	5,090	110	.	.	.
May-22-2002	54	.	.	3,680	310	.	.	.
May-29-2002	55	.	.	4,120	220	.	.	.
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	.	.	.

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
Apr-02-2002	34	.	.	5,430	.	79.2	.	7.9
Apr-09-2002	34	.	.	5,420	.	79.2	.	8.1
Apr-16-2002	44	.	.	NA	.	74.6	.	7.4
Apr-23-2002	46	.	.	4,900	.	73.5	.	7.6
Apr-30-2002	47	.	.	5,030	.	71.7	.	7.4
May-07-2002	33	.	.	4,900	.	57.7	.	7.4
May-14-2002	34	.	.	5,070	.	58.3	.	8.2
May-21-2002	56	.	.	NA	.	40.9	.	6.7
May-30-2002	62	.	.	NA	.	37.9	.	6.9
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

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
Apr-04-2002	35	19.7	8.7	5,530	39	69.8	.	8.7
Apr-11-2002	34	19.6	8.8	5,540	22	82.8	.	8.2
Apr-18-2002	46	16.4	8.7	5,210	26	72.2	.	7.6
Apr-25-2002	42	20.6	8.5	5,250	34	79.4	.	P
May-02-2002	43	17.1	8.4	4,960	70	69.8	.	7.2
May-09-2002	35	19.6	8.5	4,920	32	62.8	.	7.4
May-16-2002	36	21.5	8.5	5,100	31	55.1	.	7.9
May-23-2002	57	18.0	8.4	3,860	72	42.5	.	6.4
May-30-2002	57	27.2	8.2	4,060	P	34.1	.	P
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

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
Apr-04-2002	18	17.8	8.1	3,290	0.4	3.0
Apr-11-2002	7	18.9	8.1	3,820	0.5	3.2
Apr-18-2002	13	14.9	8.0	2,080	1.2	1.7
Apr-25-2002	24	20.5	7.8	1,410	0.8	1.1
May-02-2002	6	15.6	8.2	3,050	0.4	2.5
May-09-2002	11	20.5	8.2	1,260	0.6	2.1
May-16-2002	20	21.7	7.1	1,530	0.7	1.2
May-23-2002	28	16.6	8.0	1,660	0.5	1.4
May-30-2002	17	31.4	8.3	2,580	0.5	2.2
Jun-06-2002	14	23.9	8.0	1,590	0.6	1.6
Jun-13-2002	7	25.2	8.3	1,940	<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

** 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
Apr-04-2002	53	18.7	8.4	4,720	39.2	6.4
Apr-11-2002	41	19.0	8.4	5,140	54.9	6.8
Apr-18-2002	59	15.7	8.4	4,130	47.8	5.3
Apr-25-2002	66	20.5	8.2	3,650	43.3	P
May-02-2002	49	16.6	8.3	4,770	53.5	6.5
May-09-2002	46	19.6	8.3	4,260	41.3	5.8
May-16-2002	56	20.9	8.3	3,550	32.5	4.8
May-23-2002	85	17.2	8.1	3,390	29.0	5.2
May-30-2002	74	27.3	8.1	3,310	26.5	P
Jun-06-2002	62	24.2	8.1	3,570	25.0	5.8
Jun-13-2002	58	24.5	8.4	4,030	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

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
Apr-02-2002	.	7.7	6,910	17.0	17.0	5.2
Apr-08-2002	.	8.4	4,700	21.8	47.1	6.1
Apr-17-2002	.	8.3	4,300	25.4	56.7	6.7
Apr-23-2002	.	7.8	3,880	26.4	32.4	4.6
Apr-30-2002	.	8.5	4,680	22.2	51.1	6.4
May-07-2002	.	8.0	4,180	34.0	26.0	4.6
May-14-2002	.	8.4	3,320	23.0	22.0	4.0
May-21-2002	.	8.5	1,820	24.0	28.8	5.0
May-28-2002	.	8.9	3,930	33.3	21.8	5.2
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

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
Apr-04-2002	175	17.9	7.7	1,780	0.7	0.9
Apr-11-2002	147	18.4	7.7	1,660	<0.4	0.3
Apr-18-2002	136	14.6	7.8	1,640	0.6	0.7
Apr-24-2002	130	20.0	7.7	1,790	0.5	P
May-02-2002	139	16.4	8.1	1,560	0.5	0.7
May-09-2002	97	18.3	7.7	1,670	0.5	0.7
May-16-2002	98	20.5	7.7	1,570	0.5	0.7
May-23-2002	181	17.5	7.6	1,120	0.4	0.5
May-30-2002	94	25.9	7.6	1,340	0.6	P
Jun-06-2002	98	24.4	7.7	1,220	0.5	0.5
Jun-13-2002	168	23.1	8.0	1,230	<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

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 ^{††}	.	.	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	.	.	µS/cm	µg/L	mg/L
Apr-03-2002	3	.	.	1,550	2.7	2.0
Apr-10-2002	3	.	.	1,360	3.1	1.6
Apr-17-2002	10	.	.	1,230	1.9	1.2
Apr-24-2002	35	.	.	583	1.1	0.3
May-01-2002	35	.	.	569	1.0	0.3
May-08-2002	10	.	.	557	1.3	0.3
May-15-2002	10	.	.	537	1.2	0.4
May-22-2002	10	.	.	641	1.2	0.4
May-29-2002	0	.	.	656	1.3	0.4
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

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 ^{††}	.	.	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	.	.	µS/cm	µg/L	mg/L
Apr-03-2002	0	.	.	2,690	1.2	4.1
Apr-10-2002	0	.	.	2,670	1.1	4.0
Apr-17-2002	10	.	.	2,230	1.4	3.0
Apr-24-2002	20	.	.	690	1.4	0.5
May-01-2002	65	.	.	524	0.8	0.2
May-08-2002	80	.	.	511	1.1	0.2
May-15-2002	80	.	.	536	0.8	0.2
May-22-2002	60	.	.	576	0.8	0.3
May-29-2002	30	.	.	572	0.9	0.3
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

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 ¹¹	.	.	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	.	.	µS/cm	µg/L	mg/L
Apr-03-2002	20	.	.	997	2.8	0.7
Apr-10-2002	40	.	.	947	1.8	0.7
Apr-17-2002	60	.	.	1,020	1.8	0.7
Apr-24-2002	60	.	.	744	1.2	0.5
May-01-2002	40	.	.	649	1.1	0.4
May-08-2002	10	.	.	861	1.3	0.7
May-15-2002	50	.	.	584	1.1	0.3
May-22-2002	30	.	.	697	1.1	0.5
May-29-2002	0	.	.	1,360	1.3	1.6
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

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 ¹¹	.	.	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	.	.	µS/cm	µg/L	mg/L
Apr-03-2002	26	.	.	2,540	1.3	2.8
Apr-10-2002	17	.	.	2,160	1.4	2.3
Apr-17-2002	3	.	.	1,610	1.6	1.0
Apr-24-2002	34	.	.	1,090	1.2	1.1
May-01-2002	74	.	.	1,340	1.1	1.9
May-08-2002	90	.	.	1,130	1.1	0.8
May-15-2002	57	.	.	785	1.2	0.5
May-22-2002	65	.	.	1,030	1.1	1.1
May-29-2002	72	.	.	1,280	1.2	1.8
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

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
Apr-04-2002	222	18.9	7.9	1,930	0.6	0.8
Apr-11-2002	188	18.6	7.2	3,830	0.6	0.8
Apr-18-2002	174	15.4	7.8	1,990	0.4	0.7
Apr-25-2002	153	19.5	7.8	2,080	0.4	NA
May-02-2002	156	17.2	7.3	2,000	<0.4	0.7
May-09-2002	128	NA	NA	NA	NA	NA
May-16-2002	109	20.6	7.8	2,330	<0.4	0.7
May-23-2002	193	16.9	7.6	1,240	0.5	0.5
May-30-2002	125	26.3	7.8	1,950	0.4	0.7
Jun-06-2002	150	24.7	7.9	1,420	0.5	0.5
Jun-13-2002	169	23.3	7.2	1,340	<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

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
Apr-02-2002	.	.	.	2,570	7.6	1.8
Apr-09-2002	.	.	.	2,740	8.8	1.9
Apr-16-2002	.	.	.	2,350	8.9	1.7
Apr-23-2002	.	.	.	2,330	9.5	1.7
Apr-30-2002	.	.	.	2,510	13.2	1.8
May-07-2002	.	.	.	2,080	5.3	1.2
May-16-2002	.	.	.	2,840	10.1	2.0
May-21-2002	.	.	.	1,960	7.9	1.5
May-28-2002	.	.	.	2,010	6.5	1.5
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

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
Apr-04-2002	605	19.1	8.0	1,890	3.8	1.3
Apr-11-2002	594	19.6	8.0	1,680	3.9	1.1
Apr-18-2002	698	16.1	8.0	1,380	3.9	0.9
Apr-25-2002	804	19.3	7.9	1,120	3.5	0.7
May-02-2002	1,090	16.1	7.9	752	2.9	0.5
May-09-2002	1330	NA	NA	NA	NA	NA
May-16-2002	775	NA	NA	NA	2.1	0.7
May-23-2002	628	18.0	7.6	1,150	3.8	1.0
May-30-2002	557	24.8	7.9	1,330	3.4	1.0
Jun-06-2002	522	24.9	7.9	1,290	3.1	1.1
Jun-13-2002	459	22.6	7.8	1,450	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

Table 19. Summary of fathead minnow (*Pimephales promelas*) larvae survival in 7-day tests using water samples collected from July 2001 to June 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	%	%	%	%	%	%
Jul-2001	90	93	98	100	93	98
Aug-2001	95	95	98	95	98	98
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

Table 20. Summary of fathead minnow (*Pimephales promelas*) larvae growth in 7-day tests using water samples collected from July 2001 to June 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
Jul-2001	0.42	0.39	0.48	0.47	0.45	0.44
Aug-2001	0.43	0.44	0.35	0.38	0.36	0.36
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

Table 21. Summary of *Daphnia magna* survival in 7-day tests using water samples collected from July 2001 to June 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	%	%	%	%	%	%
Jul-2001	100	100	60*	80	90	90
Aug-2001	50*	100	30*	100	90	90
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

Table 22. Summary of *Daphnia magna* reproduction in 7-day tests using water samples collected from July 2001 to June 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
Jul-2001	25.3	28.5	16.8	17.7	26.2	15.9
Aug-2001	11.7*	42.9	15.5*	52.5	27.1	36.3
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

(*) 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 July 2001 to June 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 ⁵ cells/mL	10 ⁵ cells/mL	10 ⁵ cells/mL	10 ⁵ cells/mL	10 ⁵ cells/mL	10 ⁵ cells/mL
Jul-2001	8.3	8.5	8.5	9.4	8.0	9.1
Aug-2001	10.4*	12.4	3.0*	15.6	13.8	10.0
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

Table 24. Summary of selenium concentrations in grab water samples collected at study stations for use in laboratory toxicity tests, April 2002 to June 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
Apr-22-2002	62	0.6	52	0.7	0.4
Apr-24-2002	78	0.8	37	0.8	0.4
Apr-26-2002	70	0.7	48	0.7	<0.4
May-20-2002	52	0.7	38	0.5	<0.4
May-22-2002	34	0.6	25	0.5	<0.4
May-24-2002	46	0.8	27	0.5	<0.4
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

Table 25. Summary of total suspended solids concentrations in grab water samples collected from April 2002 to June 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
Apr-22-2002	59	45	85	129	12
Apr-24-2002	45	82	82	104	14
Apr-26-2002	31	127	93	198	37
May-20-2002	42	52	48	139	2
May-22-2002	47	79	84	138	4
May-24-2002	43	55	54	148	8
Jun-24-2002	52	36	46	119	72
Jun-26-2002	69	81	82	168	62
Jun-28-2002	57	34	47	159	43

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 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

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