GRASSLAND BYPASS PROJECT

MONTHLY DATA REPORT

March 2002

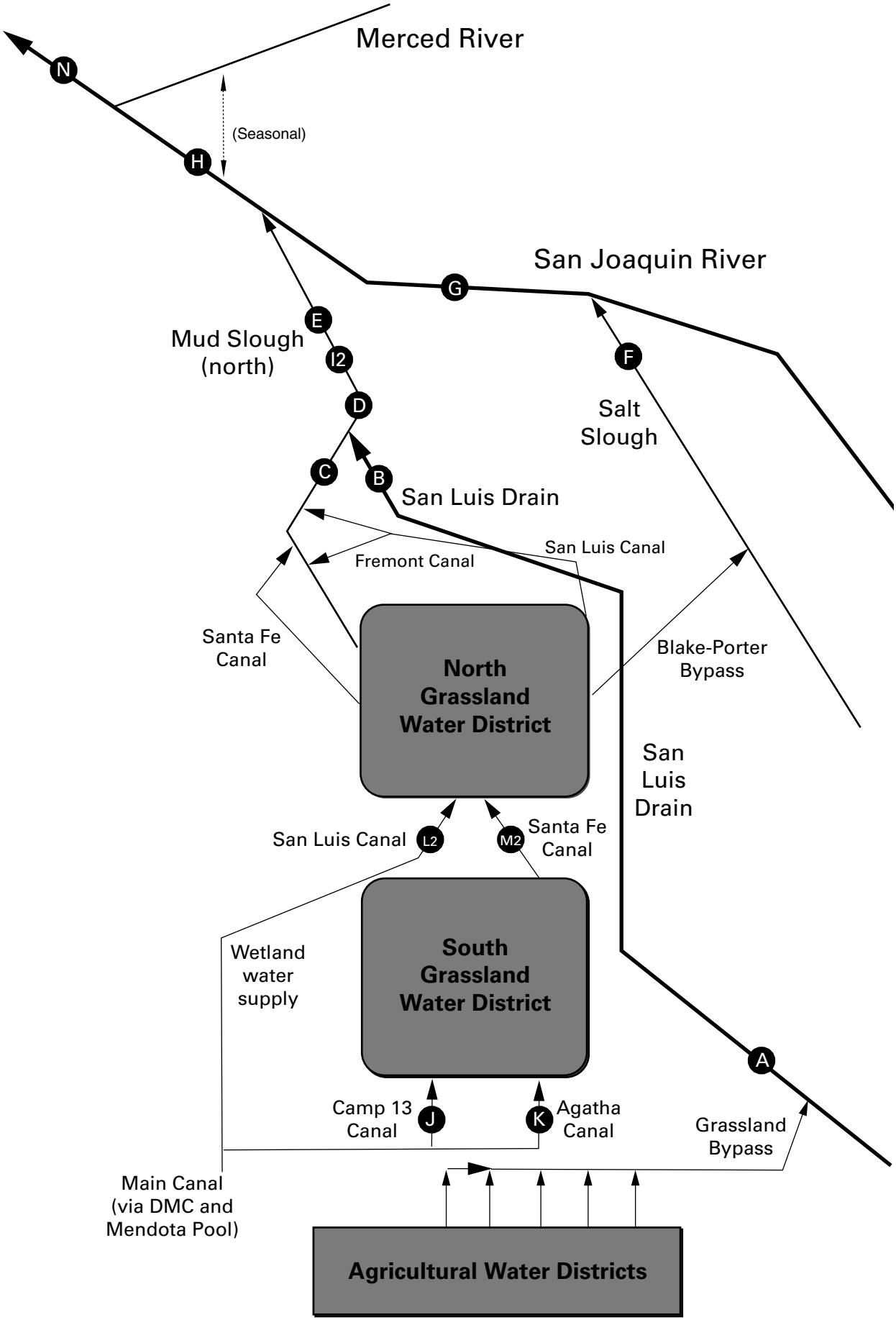
June 11, 2002

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


Merced River
N
(Seasonal)
H
San Joaquin River
G
E
Mud Slough
(north)
I2
F
D
Salt
Slough
C
B
San Luis Drain
San Luis Canal
Fremont Canal
Santa Fe
Canal
North
Grassland
Water District
Blake-Porter
Bypass
San
Luis
Drain
San Luis Canal
L2
M2
Santa Fe
Canal
Wetland
water
supply
South
Grassland
Water District
A
Camp 13
Canal
J
K
Agatha
Canal
Grassland
Bypass
Main Canal
(via DMC and
Mendota Pool)
Agricultural Water Districts

GRASSLAND BYPASS PROJECT

MONTHLY DATA REPORT

LIST OF TABLES FOR MONTHLY REPORT

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

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Specific Conductance
DATA SOURCE	SLDMWA	SLDMWA
UNITS	cfs	µS/cm
Mar-01-2002	61	4,038
Mar-02-2002	58	4,800
Mar-03-2002	56	4,410
Mar-04-2002	53	4,500
Mar-05-2002	55	4,590
Mar-06-2002	57	4,390
Mar-07-2002	59	4,210
Mar-08-2002	56	4,660
Mar-09-2002	55	4,630
Mar-10-2002	58	4,370
Mar-11-2002	58	4,230
Mar-12-2002	60	3,940
Mar-13-2002	55	4,390
Mar-14-2002	52	4,620
Mar-15-2002	56	4,650
Mar-16-2002	58	4,370
Mar-17-2002	61	4,220
Mar-18-2002	69	3,970
Mar-19-2002	64	4,020
Mar-20-2002	57	4,410
Mar-21-2002	54	4,620
Mar-22-2002	50	4,850
Mar-23-2002	47	4,970
Mar-24-2002	42	5,050
Mar-25-2002	40	5,250
Mar-26-2002	38	5,200
Mar-27-2002	37	5,260
Mar-28-2002	38	5,420
Mar-29-2002	36	5,200
Mar-30-2002	32	5,210
Mar-31-2002	33	5,160
Mean	52	4,630

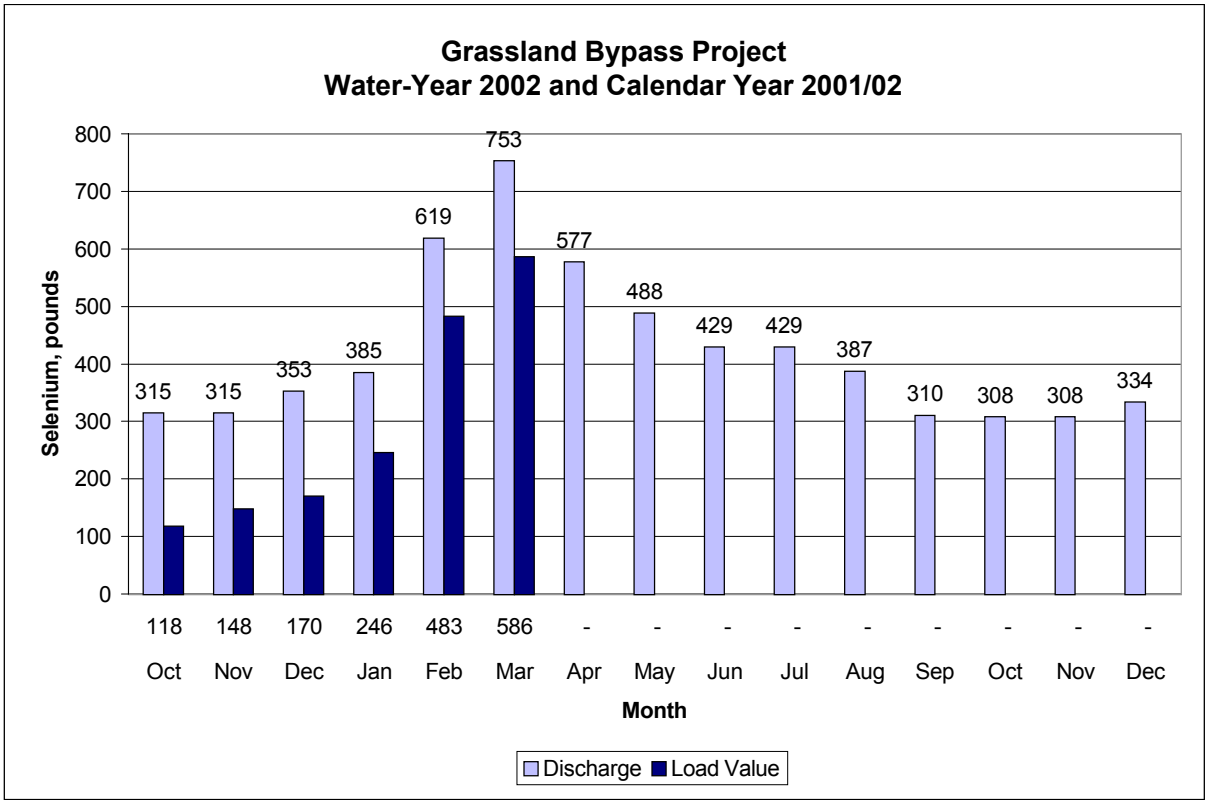
Table 2a. Continuous water monitoring at Station B (discharge from San Luis Drain), March 2002.

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
Mar-01-2002	67	13.7	P	4,800	66.5	24.0
Mar-02-2002	64	13.8	P	4,720	65.4	22.6
Mar-03-2002	60	14.4	P	4,800	69.2	22.4
Mar-04-2002	59	14.8	P	4,780	70.0	22.3
Mar-05-2002	56	15.4	P	4,730	65.9	19.9
Mar-06-2002	57	16.0	P	4,760	65.6	20.2
Mar-07-2002	60	15.4	P	4,590	61.0	19.7
Mar-08-2002	61	14.2	P	4,770	66.0	21.7
Mar-09-2002	58	13.9	P	4,650	64.5	20.2
Mar-10-2002	57	13.9	P	4,670	65.3	20.1
Mar-11-2002	59	14.3	P	4,760	71.2	22.7
Mar-12-2002	60	15.5	P	4,770	73.6	23.8
Mar-13-2002	62	15.1	P	4,710	66.8	22.3
Mar-14-2002	60	14.1	P	4,680	66.6	21.6
Mar-15-2002	55	13.6	P	4,480	52.8	15.7
Mar-16-2002	57	13.4	P	4,460	51.4	15.8
Mar-17-2002	60	12.3	P	4,660	51.2	16.6
Mar-18-2002	66	10.9	P	4,870	56.5	20.1
Mar-19-2002	68	11.9	P	4,620	58.9	21.6
Mar-20-2002	64	12.9	P	4,390	57.3	19.8
Mar-21-2002	58	14.9	P	4,170	54.6	17.1
Mar-22-2002	54	16.0	P	4,080	53.4	15.6
Mar-23-2002	51	16.1	P	4,400	55.8	15.3
Mar-24-2002	48	16.3	P	4,720	61.0	15.8
Mar-25-2002	44	16.3	P	4,970	67.6	16.0
Mar-26-2002	43	16.7	P	5,030	68.1	15.8
Mar-27-2002	41	17.2	P	5,190	69.5	15.4
Mar-28-2002	40	18.0	P	5,190	72.9 e	15.7
Mar-29-2002	40	18.7	P	5,410	76.3	16.5
Mar-30-2002	38	19.4	P	5,470	75.8	15.5
Mar-31-2002	33	20.1	P	5,490	80.8	14.4
Mean	55	15.1	P	4,770	64.6	
Total Acre-feet	**3370**				**Total (lbs)**	**586**

Load Limitation for March 2002	**(lbs)**	**753**

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



Month	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	-	577
May	-	488
Jun	-	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), March 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
Mar-01-2002	173	12.7	2,910
Mar-02-2002	205	12.7	2,800
Mar-03-2002	208	13.8	2,780
Mar-04-2002	202	14.6	2,820
Mar-05-2002	180	15.6	2,870
Mar-06-2002	155	16.1	3,080
Mar-07-2002	153	15.1	3,080
Mar-08-2002	161	13.2	3,220
Mar-09-2002	148	13.0	3,390
Mar-10-2002	137	13.8	3,480
Mar-11-2002	142	14.8	3,280
Mar-12-2002	141	15.9	3,380
Mar-13-2002	134	14.7	3,510
Mar-14-2002	125	13.2	3,550
Mar-15-2002	113	12.9	3,480
Mar-16-2002	111	13.4	3,580
Mar-17-2002	117	12.1	3,680
Mar-18-2002	130	10.8	3,720
Mar-19-2002	135	12.3	3,710
Mar-20-2002	131	14.2	3,620
Mar-21-2002	133	16.1	3,440
Mar-22-2002	137	16.2	3,410
Mar-23-2002	138	15.9	3,470
Mar-24-2002	136	16.0	3,520
Mar-25-2002	126	16.0	3,590
Mar-26-2002	115	16.7	3,670
Mar-27-2002	110	17.3	3,730
Mar-28-2002	115	18.0	3,820
Mar-29-2002	110	19.1	3,850
Mar-30-2002	96	19.7	3,980
Mar-31-2002	93	20.4	3,830
Mean	139	15.0	3,430

Table 4. Continuous water monitoring at Station F (Salt Slough at Highway 165), March 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
Mar-01-2002	229	13.2	1,590
Mar-02-2002	236	12.6	1,670
Mar-03-2002	237	13.5	1,730
Mar-04-2002	234	14.4	1,740
Mar-05-2002	264	15.1	1,660
Mar-06-2002	302	15.6	1,610
Mar-07-2002	319	14.8	1,590
Mar-08-2002	329	13.3	1,570
Mar-09-2002	338	12.5	1,610
Mar-10-2002	315	13.1	1,710
Mar-11-2002	292	14.4	1,730
Mar-12-2002	280	15.5	1,690
Mar-13-2002	278	15.0	1,710
Mar-14-2002	262	13.5	1,740
Mar-15-2002	260	12.7	1,720
Mar-16-2002	271	12.8	1,650
Mar-17-2002	292	12.0	1,650
Mar-18-2002	312	10.6	1,640
Mar-19-2002	341	11.8	1,630
Mar-20-2002	349	13.9	1,660
Mar-21-2002	313	15.8	1,770
Mar-22-2002	264	16.2	1,890
Mar-23-2002	276	15.8	1,880
Mar-24-2002	303	15.7	1,760
Mar-25-2002	296	15.7	1,780
Mar-26-2002	272	16.2	1,850
Mar-27-2002	245	16.9	1,890
Mar-28-2002	213	17.8	1,970
Mar-29-2002	204	18.7	1,900
Mar-30-2002	195	19.5	1,820
Mar-31-2002	181	20.1	1,750
Mean	274	14.8	1,730

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

See Table 26 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
Mar-01-2002	825	NA	1,660	5.1
Mar-02-2002	832	NA	1,630	4.7
Mar-03-2002	895	NA	1,650	4.8
Mar-04-2002	882	NA	1,660	4.7
Mar-05-2002	878	NA	1,690	4.7
Mar-06-2002	890	NA	1,700	4.7
Mar-07-2002	924	NA	1,670	4.3
Mar-08-2002	950	NA	1,650	4.2
Mar-09-2002	965	NA	1,640	4.1
Mar-10-2002	1,000	NA	1,620	4.2
Mar-11-2002	979	NA	1,620	4.0
Mar-12-2002	932	NA	1,660	4.1
Mar-13-2002	906	NA	1,700	4.7
Mar-14-2002	855	NA	1,760	4.8
Mar-15-2002	797	NA	1,850	4.5
Mar-16-2002	798	13.6	1,820	4.1
Mar-17-2002	813	12.4	1,730	4.2
Mar-18-2002	885	11.1	1,680	4.2
Mar-19-2002	881	12.4	1,670	4.3
Mar-20-2002	893	14.0	1,720	4.9
Mar-21-2002	896	15.6	1,760	4.9
Mar-22-2002	862	16.0	1,720	4.3
Mar-23-2002	879	15.9	1,860	3.3
Mar-24-2002	865	16.0	1,880	3.7
Mar-25-2002	907	15.8	1,810	3.6
Mar-26-2002	864	16.3	1,740	3.5
Mar-27-2002	787	17.0	1,800	3.5
Mar-28-2002	776	17.6	1,850	3.7
Mar-29-2002	761	18.6	1,890	3.6
Mar-30-2002	711	19.5	1,970	3.7
Mar-31-2002	726	20.0	1,930	3.9
Mean	865	15.7	1,740	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	.	.	.
Jan-02-2002	18	.	.	4,760	110	.	.	.
Jan-09-2002	20	.	.	5,190	9	.	.	.
Jan-16-2002	23	.	.	5,260	39	.	.	.
Jan-23-2002	20	.	.	5,430	23	.	.	.
Jan-30-2002	23	.	.	5,010	32	.	.	.
Feb-06-2002	38	.	.	4,620	72	.	.	.
Feb-13-2002	48	.	.	4,960	110	.	.	.
Feb-20-2002	48	.	.	5,110	110	.	.	.
Feb-27-2002	59	.	.	4,750	140	.	.	.
Mar-06-2002	57	.	.	4,700	140	.	.	.
Mar-13-2002	55	.	.	4,480	140	.	.	.
Mar-20-2002	57	.	.	4,370	120	.	.	.
Mar-27-2002	37	.	.	5,430	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
Jan-01-2002	16	.	.	4,800	.	72.0	.	P
Jan-08-2002	18	.	.	4,870	.	57.0	.	P
Jan-15-2002	22	.	.	5,140	.	76.2	.	P
Jan-22-2002	21	.	.	5,360	.	80.0	.	P
Jan-29-2002	27	.	.	5,440	.	80.8	.	P
Feb-05-2002	37	.	.	4,560	.	70.0	.	P
Feb-12-2002	46	.	.	4,640	.	62.4	.	P
Feb-19-2002	45	.	.	4,900	.	67.7	.	P
Feb-26-2002	57	.	.	NA	.	65.7	.	P
Mar-05-2002	55	.	.	4,800	.	67.8	.	P
Mar-12-2002	60	.	.	4,680	.	64.6	.	P
Mar-19-2002	64	.	.	4,460	.	64.0	.	P
Mar-26-2002	38	.	.	5,360	.	71.2	.	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
Jan-03-2002	29	12.9	7.9	4,210	50	50.2	.	P
Jan-10-2002	26	12.0	7.7	4,260	52	39.6	.	P
Jan-17-2002	29	8.3	8.0	4,550	38	50.8	.	P
Jan-24-2002	25	8.2	8.1	4,970	26	64.2	.	P
Jan-31-2002	28	7.7	8.1	4,680	22	60.8	.	P
Feb-07-2002	42	10.3	8.1	4,290	45	56.6	.	P
Feb-14-2002	51	12.0	8.3	4,580	35	57.6	.	P
Feb-21-2002	51	14.4	7.8	4,950	23	71.5	.	P
Feb-28-2002	61	15.6	8.3	5,090	39	69.2	.	P
Mar-07-2002	60	14.9	8.4	4,500	P	57.7	.	P
Mar-14-2002	60	13.6	8.6	4,770	42	65.6	.	P
Mar-21-2002	58	14.2	7.8	4,140	P	60.4	.	P
Mar-28-2002	40	17.6	8.5	5,350	41	68.8	.	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
Jan-03-2002	189	12.9	7.7	1,700	0.6	P
Jan-10-2002	155	11.7	7.9	1,880	<0.4	P
Jan-17-2002	103	6.6	7.9	2,090	0.5	P
Jan-24-2002	75	8.2	7.9	2,300	<0.4	P
Jan-31-2002	98	7.0	8.2	2,240	<0.4	P
Feb-07-2002	118	10.6	8.1	2,080	0.8	P
Feb-14-2002	97	11.5	7.9	2,250	0.6	P
Feb-21-2002	95	14.7	7.8	2,240	0.8	P
Feb-28-2002	95	15.9	7.9	2,160	0.5	P
Mar-07-2002	93	14.6	8.1	2,290	0.9	P
Mar-14-2002	65	11.8	7.9	2,820	0.7	P
Mar-21-2002	75	15.6	8.4	2,870	0.7	P
Mar-28-2002	75	19.1	8.4	3,200	P	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
Jan-03-2002	218	12.8	7.8	2,080	6.0	P
Jan-10-2002	181	11.7	7.8	2,260	5.8	P
Jan-17-2002	132	6.9	7.9	2,650	10.2	P
Jan-24-2002	100	8.2	8.0	3,030	13.8	P
Jan-31-2002	126	6.9	8.0	2,870	12.0	P
Feb-07-2002	160	10.5	8.1	2,690	15.5	P
Feb-14-2002	148	11.6	8.0	3,040	18.1	P
Feb-21-2002	146	14.6	7.6	3,210	22.4	P
Feb-28-2002	156	15.6	8.0	3,260	24.6	P
Mar-07-2002	153	14.8	8.2	3,220	23.3	P
Mar-14-2002	125	12.3	8.3	3,750	26.0	P
Mar-21-2002	133	14.8	8.2	3,440	24.6	P
Mar-28-2002	115	18.5	8.4	3,890	P	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
Jan-03-2002	.	7.7	2,100	27.6	6.4	1.9
Jan-09-2002	.	7.8	2,350	14.4	7.2	2.1
Jan-16-2002	.	7.6	3,080	13.3	6.9	2.5
Jan-23-2002	.	8.1	3,670	14.1	13.2	2.9
Jan-29-2002	.	7.9	3,270	14.1	13.2	2.9
Feb-05-2002	.	8.1	3,040	20.5	17.4	3.0
Feb-12-2002	.	7.9	3,130	27.3	17.9	3.0
Feb-20-2002	.	8.2	3,880	27.2	14.6	3.6
Feb-26-2002	.	8.0	3,750	35.8	19.6	3.8
Mar-05-2002	.	8.0	3,080	40.3	18.8	3.0
Mar-12-2002	.	8.2	4,070	39.5	21.6	3.5
Mar-18-2002	.	8.4	4,080	12.9	30.0	3.9
Mar-26-2002	.	8.6	4,890	62.0	15.4	3.9

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
Jan-03-2002	142	12.9	7.6	2,020	0.5	P
Jan-10-2002	135	12.2	7.5	2,010	<0.4	P
Jan-17-2002	110	7.8	7.6	2,200	0.7	P
Jan-24-2002	112	8.8	7.5	2,010	1.1	P
Jan-31-2002	130	8.2	7.8	1,870	<0.4	P
Feb-07-2002	149	10.5	7.8	1,550	1.0	P
Feb-14-2002	160	11.3	7.5	1,670	0.8	P
Feb-21-2002	237	14.6	7.7	1,330	1.0	P
Feb-28-2002	216	17.1	7.9	1,550	0.7	P
Mar-07-2002	319	14.4	7.7	1,620	1.1	P
Mar-14-2002	262	13.3	7.9	1,820	0.8	P
Mar-21-2002	313	15.5	7.6	1,830	0.9	P
Mar-28-2002	213	18.6	7.8	2,030	0.6	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[††]	.	.	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	.	.	µS/cm	µg/L	mg/L
Jan-02-2002	10	.	.	607	0.9	P
Jan-09-2002	10	.	.	532	<0.4	P
Jan-16-2002	10	.	.	648	1.5	P
Jan-23-2002	10	.	.	782	3.6	P
Jan-30-2002	10	.	.	711	2.5	P
Feb-06-2002	10	.	.	729	1.9	P
Feb-13-2002	10	.	.	779	3.5	P
Feb-20-2002	10	.	.	647	2.4	P
Feb-27-2002	10	.	.	738	2.2	P
Mar-06-2002	3	.	.	1,100	2.2	P
Mar-13-2002	3	.	.	933	3.6	P
Mar-20-2002	3	.	.	906	2.2	P
Mar-27-2002	3	.	.	992	3.6	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[††]	.	.	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	.	.	µS/cm	µg/L	mg/L
Jan-02-2002	35	.	.	884	1.4	P
Jan-09-2002	35	.	.	632	<0.4	P
Jan-16-2002	35	.	.	586	0.8	P
Jan-23-2002	35	.	.	820	3.2	P
Jan-30-2002	35	.	.	615	1.2	P
Feb-06-2002	35	.	.	813	2.5	P
Feb-13-2002	35	.	.	765	2.2	P
Feb-20-2002	35	.	.	999	5.5	P
Feb-27-2002	35	.	.	742	1.4	P
Mar-06-2002	0	.	.	1,610	1.2	P
Mar-13-2002	0	.	.	2,510	1.0	P
Mar-20-2002	0	.	.	2,600	1.2	P
Mar-27-2002	0	.	.	2,800	1.2	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[††]	.	.	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	.	.	µS/cm	µg/L	mg/L
Jan-02-2002	35	.	.	291	<0.4	P
Jan-09-2002	6	.	.	2,020	2.1	P
Jan-16-2002	0	.	.	1,750	2.4	P
Jan-23-2002	0	.	.	1,780	2.2	P
Jan-30-2002	0	.	.	2,240	3.0	P
Feb-06-2002	20	.	.	889	2.5	P
Feb-13-2002	20	.	.	915	3.0	P
Feb-20-2002	20	.	.	1,170	2.4	P
Feb-27-2002	20	.	.	932	1.8	P
Mar-06-2002	82	.	.	994	2.1	P
Mar-13-2002	67	.	.	1,080	2.0	P
Mar-20-2002	76	.	.	899	1.9	P
Mar-27-2002	72	.	.	870	1.9	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[††]	.	.	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	.	.	µS/cm	µg/L	mg/L
Jan-02-2002	128	.	.	1,470	0.7	P
Jan-09-2002	123	.	.	1,510	0.9	P
Jan-16-2002	101	.	.	1,590	1.4	P
Jan-23-2002	96	.	.	1,620	2.6	P
Jan-30-2002	102	.	.	1,570	2.3	P
Feb-06-2002	98	.	.	1,490	1.8	P
Feb-13-2002	85	.	.	1,790	1.5	P
Feb-20-2002	99	.	.	1,540	1.9	P
Feb-27-2002	97	.	.	1,510	1.3	P
Mar-06-2002	20	.	.	2,180	1.2	P
Mar-13-2002	20	.	.	2,550	1.3	P
Mar-20-2002	20	.	.	2,460	1.1	P
Mar-27-2002	20	.	.	2,210	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	.	Temperature	pH	Specific Conductance	Selenium (total)	Boron
DATA SOURCE	.	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	.	°C		µS/cm	µg/L	mg/L
Jan-03-2002	.	12.7	7.6	583	0.5	P
Jan-10-2002	.	11.7	8.0	1,000	<0.4	P
Jan-17-2002	.	8.0	7.6	1,540	0.5	P
Jan-24-2002	.	7.7	7.3	1,890	0.8	P
Jan-31-2002	.	7.0	7.7	1,760	<0.4	P
Feb-07-2002	.	10.5	7.4	1,760	0.7	P
Feb-14-2002	.	11.5	7.8	1,740	0.6	P
Feb-21-2002	.	14.3	7.3	1,390	0.8	P
Feb-28-2002	.	16.8	7.8	1,650	0.6	P
Mar-07-2002	.	14.8	7.6	1,650	0.9	P
Mar-14-2002	.	13.3	7.4	1,850	0.8	P
Mar-21-2002	.	14.9	7.3	1,760	0.7	P
Mar-28-2002	.	19.5	7.8	2,730	0.6	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
Jan-03-2002	.	.	.	950	2.0	0.6
Jan-08-2002	.	.	.	1,140	2.7	0.8
Jan-15-2001	.	.	.	1,890	2.6	1.3
Jan-22-2002	.	.	.	2,440	4.7	1.6
Jan-29-2002	.	.	.	2,660	4.5	1.6
Feb-05-2002	.	.	.	2,390	8.9	P
Feb-12-2002	.	.	.	2,250	6.4	1.6
Feb-19-2002	.	.	.	2,090	6.1	1.5
Mar-12-2002	.	.	.	2,330	7.3	1.7
Mar-19-2002	.	.	.	2,240	7.7	1.7
Mar-27-2002	.	.	.	2,510	6.1	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
Jan-03-2002	2,020	13.0	7.7	650	1.0	P
Jan-10-2002	1340	12.5	8.0	1,020	1.1	P
Jan-17-2002	878	8.7	7.8	1,420	1.8	P
Jan-24-2002	727	7.6	7.8	1,640	2.7	P
Jan-31-2002	732	7.2	8.4	1,560	2.6	P
Feb-07-2002	818	10.6	8.0	1,440	3.5	P
Feb-14-2002	752	12.0	7.9	1,640	4.4	P
Feb-21-2002	874	14.3	7.8	1,500	3.5	P
Feb-28-2002	798	15.6	7.9	1,700	4.8	P
Mar-07-2002	924	15.3	7.9	1,680	4.7	P
Mar-14-2002	855	13.7	8.1	1,820	5.2	P
Mar-21-2002	896	15.6	8.0	1,240	4.7	P
Mar-28-2002	776	18.8	8.0	1,830	3.4	P

Table 19. Summary of fathead minnow (*Pimephales promelas*) larvae survival in 7-day tests using water samples collected from April 2001 to March 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	%	%	%	%	%	%
Apr-2001	100	100	95	93	95	100
May-2001	88	97	90	90	90	100
Jun-2001	88	98	98	98	98	100
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

Table 20. Summary of fathead minnow (*Pimephales promelas*) larvae growth in 7-day tests using water samples collected from April 2001 to March 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
Apr-2001	0.64	0.72	0.71	0.73	0.67	0.57
May-2001	0.45	0.45	0.46	0.43	0.45	0.46
Jun-2001	0.61*	0.83	0.85	0.85	0.74	0.65
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

Table 21. Summary of *Daphnia magna* survival in 7-day tests using water samples collected from April 2001 to March 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	%	%	%	%	%	%
Apr-2001	100	100	100	100	89	89
May-2001	0‡‡	100	100	100	70	100
Jun-2001	50*	70*	70*	90	100	100
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

Table 22. Summary of *Daphnia magna* reproduction in 7-day tests using water samples collected from April 2001 to March 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
Apr-2001	30.7	28.6	36.5	26.2	24.9	24.8
May-2001	0‡‡	25.0	27.5	23.3	13.1	25.2
Jun-2001	18.9*	28.3*	27.6*	47.9	44.5	36.4
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

(*) 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 increas survival rate at Sation B.

Table 23. Summary of *Selenastrum capricornutum* growth in 4-day tests using water samples collected from April 2001 to March 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
Apr-2001	9.9	10.5	10.2	5.8*	10.7	20.2
May-2001	10.1*❖	18.4	13.1	19.6	15.5	14.5
Jun-2001	4.2*	12.9*	10.3*	14.7*	21.8	16.4
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	6.32*‡‡‡	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

Table 24. Summary of selenium concentrations in grab water samples collected at study stations for use in laboratory toxicity tests, January 2002 to March 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
Jan-28-2002	61	<0.4	13.0	<0.4	<0.4
Jan-30-2002	56	<0.4	14.0	0.8	<0.4
Feb-01-2002	66	<0.4	13.0	0.5	<0.4
Feb-18-2002	61	0.7	20	0.9	1.3
Feb-20-2002	65	0.7	20	1.0	1.2
Feb-22-2002	70	0.8	22	0.9	1.0
Mar-25-2002	78	<0.4	24	0.4	1.7**
Mar-27-2002	77	<0.4	27	0.6	<0.4
Mar-29-2002	81	<0.4	26	<0.4	<0.4

Table 25. Summary of total suspended solids concentrations in grab water samples collected from January 2002 to March 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
Jan-28-2002	55	23	26	74	52
Jan-30-2002	58	22	26	43	40
Feb-01-2002	74	19	28	101	29
Feb-18-2002	52	36	73	101	29
Feb-20-2002	34	48	40	81	40
Feb-22-2002	74	54	47	120	50
Mar-25-2002	40	94	56	46	16
Mar-27-2002	38	108	80	75	27
Mar-29-2002	61	163	118	64	34

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 (10^6cell/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