

# GRASSLAND BYPASS PROJECT

## MONTHLY DATA REPORT

**April 2002**

July 2, 2002

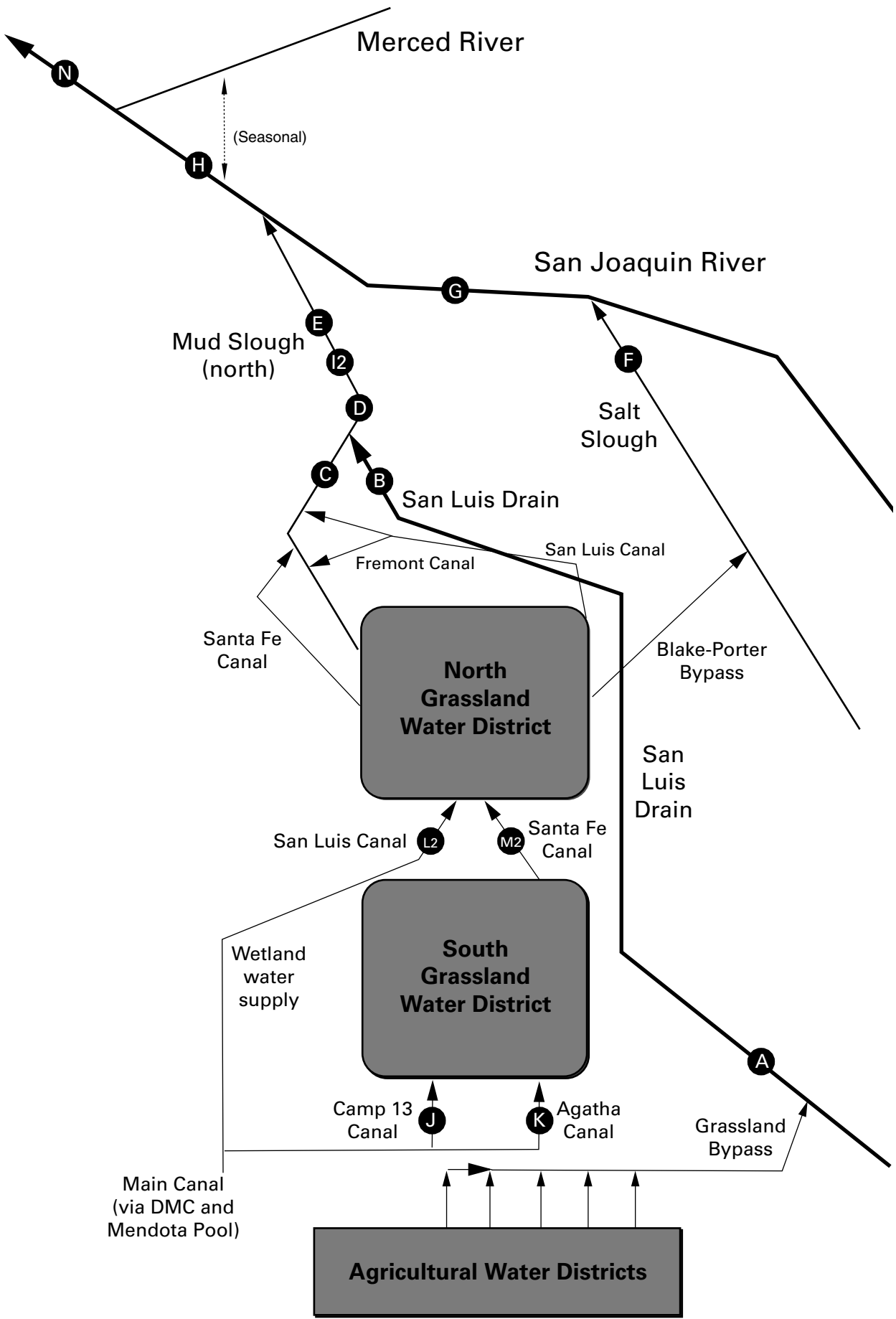
### Preliminary Results

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

San Joaquin River

Mud Slough (north)

Salt Slough

San Luis Drain

Fremont Canal

San Luis Canal

Santa Fe Canal

**North Grassland Water District**

Blake-Porter Bypass

San Luis Drain

San Luis Canal L2

Santa Fe Canal M2

Wetland water supply

**South Grassland Water District**

Camp 13 Canal J

Agatha Canal K

Grassland Bypass A

Main Canal (via DMC and Mendota Pool)

**Agricultural Water Districts**

## GRASSLAND BYPASS PROJECT

## MONTHLY DATA REPORT

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

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Specific Conductance
DATA SOURCE	SLDMWA	SLDMWA
UNITS	cfs	µS/cm
Apr-01-2002	37	4,960
Apr-02-2002	34	4,980
Apr-03-2002	35	5,040
Apr-04-2002	34	4,940
Apr-05-2002	35	5,040
Apr-06-2002	38	4,960
Apr-07-2002	38	4,270
Apr-08-2002	37	4,400
Apr-09-2002	34	5,040
Apr-10-2002	34	4,870
Apr-11-2002	34	4,790
Apr-12-2002	39	4,700
Apr-13-2002	40	4,810
Apr-14-2002	42	4,810
Apr-15-2002	45	4,840
Apr-16-2002	44	4,690
Apr-17-2002	45	4,130
Apr-18-2002	47	4,140
Apr-19-2002	48	4,690
Apr-20-2002	47	4,700
Apr-21-2002	49	4,830
Apr-22-2002	49	4,620
Apr-23-2002	46	4,480
Apr-24-2002	43	4,870
Apr-25-2002	45	4,200
Apr-26-2002	46	4,300
Apr-27-2002	48	4,910
Apr-28-2002	47	4,720
Apr-29-2002	47	4,670
Apr-30-2002	47	4,570
.	.	.
Mean	42	4,700

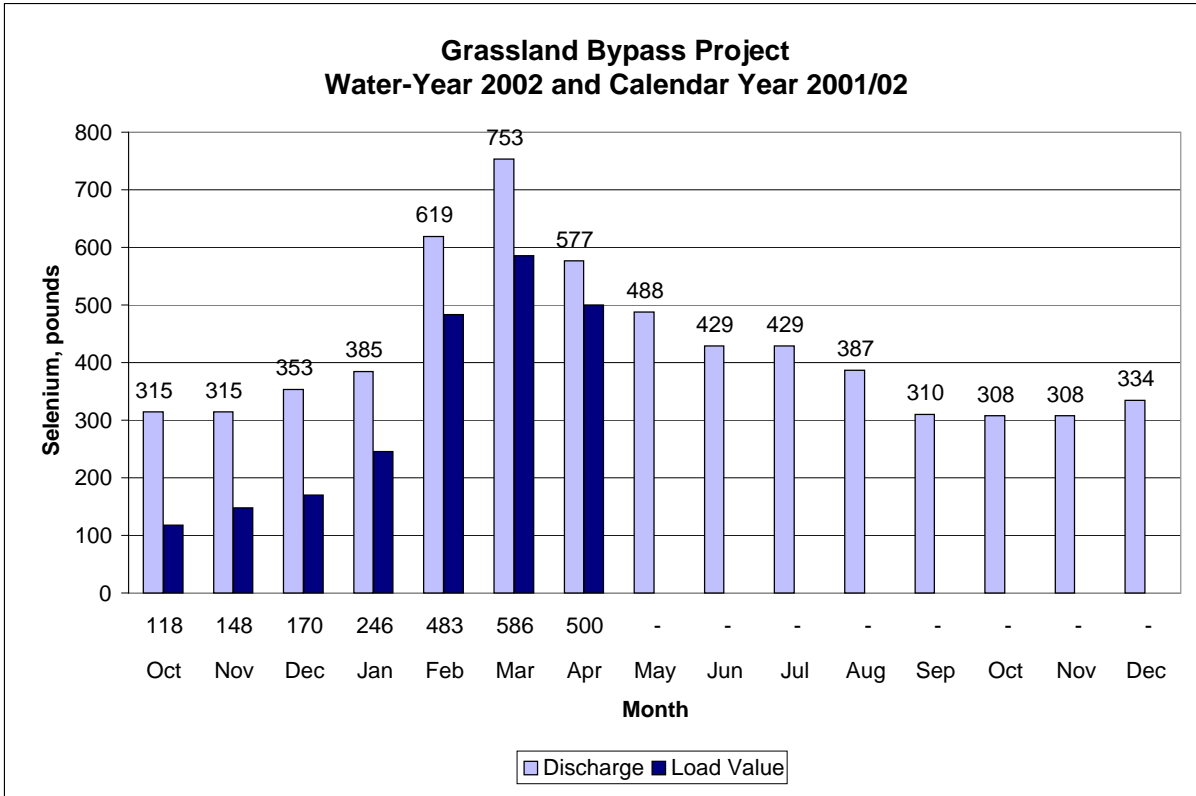
Table 2a. Continuous water monitoring at Station B (discharge from San Luis Drain), April 2002.

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
Apr-01-2002	34	21.1	P	5,550	80.2	14.7
Apr-02-2002	36	21.8	P	5,490	78.9	15.3
Apr-03-2002	34	21.3	P	5,350	74.7	13.7
Apr-04-2002	35	20.2	P	5,520	74.1	14.0
Apr-05-2002	34	19.7	P	5,390	75.7	13.9
Apr-06-2002	35	19.5	P	5,290	75.4	14.2
Apr-07-2002	37	19.4	P	5,410	76.1	15.2
Apr-08-2002	38	20.2	P	5,320	74.6	15.3
Apr-09-2002	37	19.7	P	5,290	74.7	14.9
Apr-10-2002	34	19.6	P	5,240	78.1	14.3
Apr-11-2002	34	20.1	P	5,260	77.1	14.1
Apr-12-2002	35	20.8	P	5,450	83.1	15.7
Apr-13-2002	38	21.5	P	5,420	77.3	15.8
Apr-14-2002	39	22.9	P	5,480	78.2	16.4
Apr-15-2002	40	20.8	P	5,230	71.7	15.5
Apr-16-2002	44	19.1	P	5,060	72.8	17.3
Apr-17-2002	43	18.1	P	5,090	76.7	17.8
Apr-18-2002	46	17.2	P	5,180	78.6	19.5
Apr-19-2002	50	15.9	P	5,150	82.0	22.1
Apr-20-2002	47	17.2	P	4,980	76.8	19.5
Apr-21-2002	46	18.1	P	4,510	61.7	15.3
Apr-22-2002	48	19.2	P	4,620	66.0	17.1
Apr-23-2002	47	20.5	P	4,910	72.1	18.3
Apr-24-2002	44	21.0	P	5,040	75.6	17.9
Apr-25-2002	42	21.1	P	5,020	79.8	18.1
Apr-26-2002	44	19.6	P	5,130	76.4	18.1
Apr-27-2002	46	17.9	P	5,060	75.4	18.7
Apr-28-2002	46	17.8	P	5,240	71.3	17.7
Apr-29-2002	46	18.1	P	5,240	80.2	19.9
Apr-30-2002	46	17.5	P	3,250	80.5	20.0
.	.	.	P	.	.	.
Mean	41	19.6	P	5,140	75.9	
Total Acre-feet	2,430				Total (lbs)	500

Load Limitation for April 2002	(lbs)	577
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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	500	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), April 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
Apr-01-2002	85	21.1	3,990
Apr-02-2002	76	21.6	4,100
Apr-03-2002	62	20.8	4,120
Apr-04-2002	53	19.6	4,150
Apr-05-2002	50	19.1	4,210
Apr-06-2002	54	19.5	4,240
Apr-07-2002	53	19.4	4,290
Apr-08-2002	51	20.3	4,340
Apr-09-2002	47	19.1	4,400
Apr-10-2002	42	19.4	4,440
Apr-11-2002	41	19.7	4,490
Apr-12-2002	40	20.2	4,550
Apr-13-2002	49	21.1	4,630
Apr-14-2002	47	22.5	4,700
Apr-15-2002	44	19.5	4,770
Apr-16-2002	49	18.7	4,750
Apr-17-2002	50	18.3	4,500
Apr-18-2002	59	17.5	4,090
Apr-19-2002	59	16.4	4,280
Apr-20-2002	64	17.5	3,970
Apr-21-2002	60	18.6	3,750
Apr-22-2002	65	19.7	3,690
Apr-23-2002	83	20.9	3,190
Apr-24-2002	70	21.2	3,250
Apr-25-2002	66	21.3	3,330
Apr-26-2002	56	19.6	3,790
Apr-27-2002	56	17.9	3,810
Apr-28-2002	60	18.0	3,830
Apr-29-2002	59	18.2	3,960
Apr-30-2002	54	17.8	4,200
.	.	.	.
Mean	57	19.5	4,130

Table 4. Continuous water monitoring at Station F (Salt Slough at Highway 165), April 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
Apr-01-2002	183	20.6	1,630
Apr-02-2002	172	21.1	1,650
Apr-03-2002	171	20.2	1,770
Apr-04-2002	175	18.7	1,750
Apr-05-2002	176	18.2	1,710
Apr-06-2002	176	18.5	1,660
Apr-07-2002	171	18.6	1,650
Apr-08-2002	165	19.9	1,690
Apr-09-2002	141	18.9	1,780
Apr-10-2002	138	18.8	1,780
Apr-11-2002	147	19.8	1,670
Apr-12-2002	149	20.4	1,680
Apr-13-2002	158	20.9	1,610
Apr-14-2002	179	22.4	1,490
Apr-15-2002	192	19.2	1,420
Apr-16-2002	163	16.9	1,540
Apr-17-2002	127	16.9	1,790
Apr-18-2002	136	16.2	1,600
Apr-19-2002	135	15.9	1,660
Apr-20-2002	146	17.5	1,520
Apr-21-2002	149	18.3	1,460
Apr-22-2002	153	19.6	1,410
Apr-23-2002	126	20.8	1,560
Apr-24-2002	130	20.7	1,710
Apr-25-2002	139	20.3	1,710
Apr-26-2002	138	18.5	1,670
Apr-27-2002	133	16.5	1,790
Apr-28-2002	153	16.7	1,570
Apr-29-2002	161	17.2	1,370
Apr-30-2002	166	16.9	1,280
.	.	.	.
Mean	155	18.8	1,620



**Table 5. Continuous water monitoring at Station N (San Joaquin River at Crow's Landing), April 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
Apr-01-2002	688	20.6	1,850	3.6
Apr-02-2002	661	21.1	1,810	3.6
Apr-03-2002	638	20.8	1,760	4.0
Apr-04-2002	605	19.7	1,890	4.1
Apr-05-2002	573	19.1	1,870	3.8
Apr-06-2002	564	19.3	1,850	3.9
Apr-07-2002	621	19.7	1,720	4.1
Apr-08-2002	650	NA	1,530	3.6
Apr-09-2002	617	NA	1,570	4.0
Apr-10-2002	607	NA	1,570	3.9
Apr-11-2002	594	NA	1,650	3.9
Apr-12-2002	601	20.4	1,600	3.9
Apr-13-2002	624	21.0	1,510	3.6
Apr-14-2002	620	22.3	1,550	4.3
Apr-15-2002	662	20.3	1,390	3.9
Apr-16-2002	683	18.3	1,270	3.8
Apr-17-2002	703	17.7	1,240	3.8
Apr-18-2002	698	17.1	1,300	4.3
Apr-19-2002	746	16.4	1,300	4.2
Apr-20-2002	744	17.4	1,280	4.5
Apr-21-2002	775	18.4	1,280	4.7
Apr-22-2002	781	19.4	1,190	4.0
Apr-23-2002	816	20.2	1,110	3.4
Apr-24-2002	831	20.8	1,090	3.4
Apr-25-2002	804	20.5	1,120	3.8
Apr-26-2002	769	19.8	NA	NA
Apr-27-2002	808	18.0	NA	NA
Apr-28-2002	828	17.5	NA	NA
Apr-29-2002	845	17.6	NA	NA
Apr-30-2002	807	17.3	NA	NA
.	.	.	.	.
Mean	699	19.3	1,490	3.9

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	.	.	.
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	.	.	.
Apr-03-2002	35	.	.	5,470	P	.	.	.
Apr-10-2002	34	.	.	5,360	P	.	.	.
Apr-17-2002	45	.	.	4,450	P	.	.	.
Apr-24-2002	43	.	.	4,870	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
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
Apr-02-2002	34	.	.	5,430	.	79.2	.	P
Apr-09-2002	34	.	.	5,420	.	79.2	.	P
Apr-16-2002	44	.	.	NA	.	74.6	.	P
Apr-23-2002	46	.	.	4,900	.	73.5	.	P
Apr-30-2002	47	.	.	5,030	.	71.7	.	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
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
Apr-04-2002	35	19.7	8.7	5,530	P	69.8	.	P
Apr-11-2002	34	19.6	8.8	5,540	P	82.8	.	P
Apr-18-2002	46	16.4	8.7	5,210	P	72.2	.	P
Apr-25-2002	42	20.6	8.5	5,250	P	79.4	.	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
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	0.5	P
Apr-04-2002	18	17.8	8.1	3,290	0.4	P
Apr-11-2002	7	18.9	8.1	3,820	0.5	P
Apr-18-2002	13	14.9	8.0	2,080	1.2	P
Apr-25-2002	24	20.5	7.8	1,410	0.8	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
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	20.4	P
Apr-04-2002	53	18.7	8.4	4,720	39.2	P
Apr-11-2002	41	19.0	8.4	5,140	54.9	P
Apr-18-2002	59	15.7	8.4	4,130	47.8	P
Apr-25-2002	66	20.5	8.2	3,650	43.3	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
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
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

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
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
Apr-04-2002	175	17.9	7.7	1,780	0.7	P
Apr-11-2002	147	18.4	7.7	1,660	<0.4	P
Apr-18-2002	136	14.6	7.8	1,640	0.6	P
Apr-24-2002	130	20.0	7.7	1,790	0.5	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
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
Apr-03-2002	3	.	.	1,550	2.7	P
Apr-10-2002	3	.	.	1,360	3.1	P
Apr-17-2002	10	.	.	1,230	1.9	P
Apr-24-2002	35	.	.	583	1.1	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
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
Apr-03-2002	0	.	.	2,690	1.2	P
Apr-10-2002	0	.	.	2,670	1.1	P
Apr-17-2002	10	.	.	2,230	1.4	P
Apr-24-2002	20	.	.	690	1.4	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
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
Apr-03-2002	20	.	.	997	2.8	P
Apr-10-2002	40	.	.	947	1.8	P
Apr-17-2002	60	.	.	1,020	1.8	P
Apr-24-2002	60	.	.	744	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
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
Apr-03-2002	26	.	.	2,540	1.3	P
Apr-10-2002	17	.	.	2,160	1.4	P
Apr-17-2002	3	.	.	1,610	1.6	P
Apr-24-2002	34	.	.	1,090	1.2	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
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
Apr-04-2002	.	18.9	7.9	1,930	0.6	P
Apr-11-2002	.	18.6	7.2	3,830	0.6	P
Apr-18-2002	.	15.4	7.8	1,990	0.4	P
Apr-25-2002	.	19.5	7.8	2,080	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
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
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



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
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
Apr-04-2002	605	19.1	8.0	1,890	3.8	P
Apr-11-2002	594	19.6	8.0	1,680	3.9	P
Apr-18-2002	698	16.1	8.0	1,380	3.9	P
Apr-25-2002	804	19.3	7.9	1,120	3.5	P

Table 19. Summary of fathead minnow (*Pimephales promelas*) larvae survival in 7-day tests using water samples collected from May 2001 to April 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	%	%	%	%	%	%
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	83e	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

Table 20. Summary of fathead minnow (*Pimephales promelas*) larvae growth in 7-day tests using water samples collected from May 2001 to April 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
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
Apr-2002	0.64	0.63	0.50	0.63	0.55	0.58

Table 21. Summary of *Daphnia magna* survival in 7-day tests using water samples collected from May 2001 to April 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	%	%	%	%	%	%
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
Apr-2002	100	90	100	90	100	100

Table 22. Summary of *Daphnia magna* reproduction in 7-day tests using water samples collected from May 2001 to April 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
May-2001	0 <sup>††</sup>	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
Apr-2002	56.2	43.4	59.8	49.3	49.5	47.3

(\*) 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 May 2001 to April 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
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
Apr-2002	1.44*	7.0	4.4*	6.6	5.8	33.0

Table 24. Summary of selenium concentrations in grab water samples collected at study stations for use in laboratory toxicity tests, February 2002 to April 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
Feb-01-2002	66	<0.4	13	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
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

Table 25. Summary of total suspended solids concentrations in grab water samples collected from February 2002 to April 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
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
Apr-22-2002	59	45	85	129	12
Apr-24-2002	45	82	82	104	14
Apr-26-2002	31	127	93	198	37

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