GRASSLAND BYPASS PROJECT

MONTHLY DATA REPORT

March 1998

May 26, 1998

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

LIST OF TABLES FOR MONTHLY REPORT

Table 1. Continuous water monitoring at Station A (inflow to San Luis Drain), March 1998.

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow
DATA SOURCE	USBR
UNITS	cfs
Mar-01-1998	124.6
Mar-02-1998	114.5
Mar-03-1998	116.5
Mar-04-1998	118.6
Mar-05-1998	115.5
Mar-06-1998	115.6
Mar-07-1998	119.9
Mar-08-1998	115.8
Mar-09-1998	113.4
Mar-10-1998	117.1
Mar-11-1998	113.6
Mar-12-1998	119.5
Mar-13-1998	117.7
Mar-14-1998	118.6
Mar-15-1998	114.1
Mar-16-1998	107.0
Mar-17-1998	114.9
Mar-18-1998	113.0
Mar-19-1998	109.5
Mar-20-1998	107.6
Mar-21-1998	105.0
Mar-22-1998	97.6
Mar-23-1998	96.5
Mar-24-1998	106.0
Mar-25-1998	139.1
Mar-26-1998	142.8
Mar-27-1998	130.1
Mar-28-1998	118.9
Mar-29-1998	111.7
Mar-30-1998	100.3
Mar-31-1998	112.0

PRELIMINARY RESULTS

Table 2. Continuous water monitoring at Station B (discharge from San Luis Drain), March 1998.

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Temperature	Specific Conductance	Selenium (total)	Selenium (total) Load
DATA SOURCE	USBR	USBR	CVRWQCB	CVRWQCB	Computed
UNITS	cfs	°C	µS/cm	µg/l	lbs
Mar-01-1998	128.7	16.2	4,000	64.1	44.5
Mar-02-1998	125.3	16.6	4,340	68.2	46.1
Mar-03-1998	115.8	16.3	4,480	71.2	44.5
Mar-04-1998	116.4	14.8	4,830	78.8	49.5
Mar-05-1998	119.5	13.7	5,050	82.2	53.0
Mar-06-1998	114.7	12.6	5,160	81.6	50.5
Mar-07-1998	116.6	12.4	5,160	75.2	47.3
Mar-08-1998	118.2	13.5	5,150	82.0	52.3
Mar-09-1998	117.1	14.2	5,210	86.2	54.4
Mar-10-1998	113.3	15.7	5,260	86.2	52.7
Mar-11-1998	117.4	16.5	5,110	84.4	53.4
Mar-12-1998	115.3	16.7	5,270	86.2	53.6
Mar-13-1998	120.8	16.4	4,900	76.8	50.0
Mar-14-1998	119.4	16.0	4,940	86.9	56.0
Mar-15-1998	118.9	16.6	4,960	84.6	54.3
Mar-16-1998	112.6	17.4	3,800	60.8	36.9
Mar-17-1998	109.6	18.4	4,920	78.8	46.6
Mar-18-1998	113.4	19.1	5,260	87.8	53.7
Mar-19-1998	111.8	19.5	5,220	89.0	53.7
Mar-20-1998	109.3	19.3	5,320	92.1	54.3
Mar-21-1998	107.0	18.9	5,140	87.1	50.3
Mar-22-1998	104.4	19.4	5,210	95.6	53.8
Mar-23-1998	97.1	19.7	5,220	98.3	51.5
Mar-24-1998	100.4	19.6	5,220	102.0	55.2
Mar-25-1998	115.1	19.0	5,110	90.8	56.4
Mar-26-1998	135.6	17.6	4,990	89.6	65.5
Mar-27-1998	138.9	16.7	3,850	60.0	44.9
Mar-28-1998	127.4	15.9	4,960	80.1	55.0
Mar-29-1998	113.4	14.8	5,440	86.2	52.7
Mar-30-1998	105.7	14.8	5,620	94.6	53.9
Mar-31-1998	103.6	14.8	5,680	96.0	53.6
Mean	115.6	16.6	4,993	83.3	
Total					**1,600**

Load Limitation for March 1998 (lbs)	**1,066**

Table 3. Continuous water monitoring at Station D (Mud Slough North downstream of drainage discharges), March 1998.

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-01-1998	910	14.8	1,420
Mar-02-1998	869	15.2	1,500
Mar-03-1998	821	15.0	1,610
Mar-04-1998	789	12.7	1,770
Mar-05-1998	763	11.4	1,940
Mar-06-1998	766	10.9	1,990
Mar-07-1998	765	11.1	1,990
Mar-08-1998	775	12.3	1,990
Mar-09-1998	775	13.3	1,990
Mar-10-1998	742	14.8	2,160
Mar-11-1998	687	16.0	2,370
Mar-12-1998	638	16.2	2,520
Mar-13-1998	599	15.6	2,690
Mar-14-1998	575	15.4	2,730
Mar-15-1998	547	17.3	2,800
Mar-16-1998	515	18.4	2,510
Mar-17-1998	482	18.5	2,850
Mar-18-1998	460	19.0	3,150
Mar-19-1998	433	19.4	3,260
Mar-20-1998	409	19.0	3,400
Mar-21-1998	384	18.6	3,440
Mar-22-1998	349	19.5	3,640
Mar-23-1998	320	19.8	3,770
Mar-24-1998	312	19.0	3,810
Mar-25-1998	330	17.7	3,680
Mar-26-1998	373	16.7	3,320
Mar-27-1998	412	15.7	3,000
Mar-28-1998	440	14.7	3,330
Mar-29-1998	430	13.6	3,220
Mar-30-1998	393	14.2	3,180
Mar-31-1998	378	13.8	3,120

Table 4. Continuous water monitoring at Station F (Salt Slough at Highway 165), March 1998.

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-01-1998	654	14.9	2,060
Mar-02-1998	622	15.4	1,970
Mar-03-1998	594	15.5	1,980
Mar-04-1998	569	14.0	1,990
Mar-05-1998	529	12.2	1,980
Mar-06-1998	508	11.3	1,980
Mar-07-1998	503	11.2	1,970
Mar-08-1998	509	12.2	1,940
Mar-09-1998	507	13.3	1,910
Mar-10-1998	507	14.5	1,870
Mar-11-1998	508	15.4	1,810
Mar-12-1998	501	15.6	1,760
Mar-13-1998	495	15.3	1,690
Mar-14-1998	482	14.9	1,650
Mar-15-1998	474	15.9	1,550
Mar-16-1998	470	17.4	1,600
Mar-17-1998	443	17.7	1,720
Mar-18-1998	412	18.2	1,800
Mar-19-1998	382	18.5	1,830
Mar-20-1998	368	18.4	1,770
Mar-21-1998	347	18.0	1,760
Mar-22-1998	314	P	P
Mar-23-1998	294	P	P
Mar-24-1998	308	P	P
Mar-25-1998	361	P	P
Mar-26-1998	517	P	P
Mar-27-1998	632	P	P
Mar-28-1998	628	P	P
Mar-29-1998	530	P	P
Mar-30-1998	P	P	P
Mar-31-1998	P	P	P

Table 5. Continuous water monitoring at Station N (San Joaquin River at Crow's Landing), March 1998.

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-01-1998	17,000	13.4	451	1.6
Mar-02-1998	15,200	13.9	501	1.3
Mar-03-1998	13,900	14.1	427	1.5
Mar-04-1998	12,100	13.2	524	1.5
Mar-05-1998	11,500	11.8	557	1.4
Mar-06-1998	11,000	10.9	540	1.6
Mar-07-1998	10,500	10.7	560	1.7
Mar-08-1998	10,200	11.1	564	2.0
Mar-09-1998	10,200	11.9	NA	NA
Mar-10-1998	10,200	12.8	NA	NA
Mar-11-1998	9,980	13.6	NA	NA
Mar-12-1998	9,660	14.1	NA	NA
Mar-13-1998	9,340	13.8	NA	NA
Mar-14-1998	8,990	13.4	NA	NA
Mar-15-1998	8,320	14.4	NA	NA
Mar-16-1998	7,830	15.5	NA	NA
Mar-17-1998	7,610	16.1	NA	NA
Mar-18-1998	7,330	16.3	NA	NA
Mar-19-1998	7,050	16.8	NA	NA
Mar-20-1998	6,820	17.0	636	2.1
Mar-21-1998	6,640	17.0	642	2.3
Mar-22-1998	6,370	17.2	668	2.3
Mar-23-1998	6,110	17.5	656	2.3
Mar-24-1998	5,890	17.6	670	2.4
Mar-25-1998	6,020	16.8	663	2.4
Mar-26-1998	7,780	15.8	468	1.7
Mar-27-1998	10,700	15.3	462	1.9
Mar-28-1998	14,600	14.3	331	1.1
Mar-29-1998	15,900	13.4	302	1.1
Mar-30-1998	15,200	13.4	327	1.2
Mar-31-1998	14,200	13.2	354	1.3

Table 6. Weekly water quality monitoring at Station A (inflow to San Luis Drain), 1998.

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Temperature	pH	Specific Conductance	Total Suspended Solids	Selenium (total)	Selenium (dissolved)	Boron
DATA SOURCE	USBR	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	°C		µS/cm	mg/l	µg/l	µg/l	mg/l
Jan-07-1998	15.1	NA	NA	5,840	42	118.0	118.0	P
Jan-14-1998	22.9	NA	NA	4,110	NA	68.6	67.9	P
Jan-21-1998	20.0	NA	NA	5,800	P	82.5	81.7	P
Jan-28-1998	20.5	NA	NA	6,100	79	78.2	77.4	P
Feb-04-1998	122.1	NA	NA	2,040	260	19.2	18.4	P
Feb-11-1998	126.3	NA	NA	3,450	P	47.4	45.9	P
Feb-18-1998	121.8	NA	NA	3,880	240	61.2	58.4	P
Feb-25-1998	124.1	NA	NA	3,420	230	53.4	50.8	P
Mar-04-1998	118.6	NA	NA	5,120	180	79.0	76.8	P
Mar-11-1998	113.6	NA	NA	5,180	180	86.2	85.6	P
Mar-18-1998	113.0	NA	NA	5,400	340	92.4	91.5	P
Mar-25-1998	139.1	NA	NA	3,030	460	49.0	50.6	P

Table 7. Weekly water quality monitoring at Station B (discharge from San Luis Drain), 1998.

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Temperature	pH	Specific Conductance	Total Suspended Solids	Selenium (total)	Selenium (dissolved)	Boron
DATA SOURCE	USBR	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	°C		µS/cm	mg/l	µg/l	µg/l	mg/l
Jan-02-1998	16.6	12.7	8.3	5,360	28	73.0	73.0	P
Jan-08-1998	13.7	12.1	8.1	5,300	11	80.1	80.1	P
Jan-15-1998	28.9	11.6	7.5	5,080	34	98.9	100.0	P
Jan-22-1998	23.0	11.0	8.2	4,760	17	73.5	73.2	P
Jan-29-1998	24.9	12.7	7.9	5,300	28	74.4	75.4	P
Feb-05-1998	137.8	10.6	7.2	2,950	110	35.5	33.4	P
Feb-11-1998	135.3	13.3	7.7**	3,030	P	37.0	36.6	P
Feb-19-1998	127.8	13.3	7.9	3,900	79	55.0	54.4	P
Feb-26-1998	127.9	13.3	7.9	3,390	240	39.0	42.6	P
Mar-05-1998	119.5	13.3	8.1	5,240	130	82.4	80.5	P
Mar-12-1998	115.3	17.2	7.9	5,410	66	85.8	88.8	P
Mar-19-1998	111.8	22.2	8.0	5,590	120	91.5	90.9	P
Mar-26-1998	135.6	19.4	7.9	4,720	140	77.6	79.4	P

Table 8. Weekly water quality monitoring at Station C (Mud Slough North upstream of drainage discharges), 1998.

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-02-1998	.	12.7	7.6	2,210	0.4	P
Jan-08-1998	.	12.1	8.2	2,070	0.4	P
Jan-15-1998	.	12.1	7.3	1,432	0.8	P
Jan-22-1998	.	11.0	8.1	934	0.5	P
Jan-29-1998	.	13.8	7.7	1,420	0.6	P
Feb-05-1998	.	12.2	7.8	753	0.7	P
Feb-11-1998	.	NA	NA	NA	NA	NA
Feb-19-1998	.	13.3	7.7	823	1.0	P
Feb-26-1998	.	13.9	7.8	838	1.1	P
Mar-05-1998	.	12.8	7.9	1,090	1.1	P
Mar-12-1998	.	17.2	8.2	1,485	1.3	P
Mar-19-1998	.	22.2	8.5	1,849	1.2	P
Mar-26-1998	.	17.8	7.8	1,428	1.3	P

Table 9. Weekly water quality monitoring at Station D (Mud Slough North downstream of drainage discharges), 1998.

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-02-1998	102	13.2	7.5	2,970	13.1	P
Jan-08-1998	121	12.1	8.3	2,610	12.1	P
Jan-15-1998	406	11.0	7.5	1,733	8.1	P
Jan-22-1998	637	11.0	8.1	1,103	3.1	P
Jan-29-1998	318	13.8	7.8	1,790	6.6	P
Feb-05-1998	866	12.2	7.8	1,190	6.4	P
Feb-11-1998	1040	NA	7.4**	1,096	5.7	NA
Feb-19-1998	1010	13.3	7.7	1,266	8.0	P
Feb-26-1998	1030	13.3	7.8	1,335	8.7	P
Mar-05-1998	763	12.8	8.0	1,851	13.8	P
Mar-12-1998	638	16.7	8.1	2,280	19.5	P
Mar-19-1998	433	22.2	8.2	2,900	24.6	P
Mar-26-1998	373	17.8	7.5	2,540	24.0	P

Table 10. Weekly water quality monitoring at Station F (Salt Slough at Lander Avenue), 1998.

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-02-1998	72	13.2	7.6	2,730	0.7	P
Jan-08-1998	71	13.2	8.0	2,650	0.7	P
Jan-15-1998	175	12.1	7.2	2,370	1.6	P
Jan-22-1998	307	11.0	7.8	2,320	1.0	P
Jan-29-1998	100	13.2	7.6	2,180	0.9	P
Feb-05-1998	646	12.8	7.4	1,370	2.2	P
Feb-11-1998	713	12.2	7.4**	1,746	4.3	P
Feb-19-1998	664	12.2	7.5	1,985	4.5	P
Feb-26-1998	728	15.0	7.5	2,000	5.1	P
Mar-05-1998	529	13.3	7.6	1,969	2.2	P
Mar-12-1998	501	16.7	7.4	1,730	2.8	P
Mar-19-1998	382	22.2	7.3	1,840	1.6	P
Mar-26-1998	517	17.8	7.2	1,280	1.1	P

Table 11. Weekly water quality monitoring at Station G (San Joaquin River at Fremont Ford), 1998.

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-02-1998	.	12.1	7.3	2,730	1.2	P
Jan-08-1998	.	12.7	7.9	2,830	0.8	P
Jan-15-1998	.	11.0	7.2	281	0.5	P
Jan-22-1998	.	11.0	7.7	533	0.6	P
Jan-29-1998	.	12.7	7.5	1,437	0.7	P
Feb-05-1998	.	13.9	7.5	260	0.4	P
Feb-11-1998	.	12.2	7.3**	207	0.6	P
Feb-19-1998	.	12.2	7.2	246	0.4	P
Feb-26-1998	.	14.4	7.0	204	0.5	P
Mar-05-1998	.	12.8	7.8	375	0.7	P
Mar-12-1998	.	16.1	8.5	349	0.6	P
Mar-19-1998	.	22.2	6.9	426	0.6	P
Mar-26-1998	.	17.8	7.9	211	0.6	P

Table 12. Weekly water quality monitoring at Station H (San Joaquin River at Hills Ferry), 1998.

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-02-1998	.	12.1	7.3	2,710	3.3	P
Jan-08-1998	.	12.1	8.0	2,460	5.1	P
Jan-15-1998	.	11.0	7.1	669	2.0	P
Jan-22-1998	.	11.0	7.7	692	1.0	P
Jan-28-1998	.	13.2	7.8	1,622	2.4	P
Feb-05-1998	.	12.2	7.4	669	2.0	P
Feb-11-1998	.	P	P	778	1.9	P
Feb-19-1998	.	12.2	7.5	917	3.0	P
Feb-26-1998	.	14.4	7.6	918	2.8	P
Mar-05-1998	.	13.3	7.8	857	2.8	P
Mar-12-1998	.	16.7	7.9	835	3.3	P
Mar-19-1998	.	22.2	7.3	888	3.1	P
Mar-26-1998	.	18.9	7.9	793	3.3	P

Table 13. Weekly water quality monitoring at Station J (Camp 13 Ditch), 1998.

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Temperature	pH	Specific Conductance	Selenium (total)	Boron
DATA SOURCE	SLDMWA††	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	°C		µS/cm	µg/l	mg/l
Jan-07-1998	10	NA	NA	1,106	1.0	P
Jan-14-1998	1	NA	NA	1,142	1.2	P
Jan-21-1998	1	NA	NA	2,050	1.7	P
Jan-28-1998	1	NA	NA	6,610	1.6	P
Feb-04-1998	4	NA	NA	1,423	2.8	P
Feb-11-1998	14	NA	NA	2,420	4.0	P
Feb-18-1998	12	NA	NA	2,370	3.3	P
Feb-25-1998	7	NA	NA	2,250	1.8	P
Mar-04-1998	1	NA	NA	3,980	3.4	P
Mar-11-1998	10	NA	NA	1,210	4.0	P
Mar-18-1998	2	NA	NA	4,690	3.5	P
Mar-25-1998	0	NA	NA	2,340	1.7	P

Table 14. Weekly water quality monitoring at Station K (Agatha Canal), 1998.

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Temperature	pH	Specific Conductance	Selenium (total)	Boron
DATA SOURCE	SLDMWA††	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	°C		µS/cm	µg/l	mg/l
Jan-07-1998	7	NA	NA	830	0.7	P
Jan-14-1998	1	NA	NA	1,037	1.2	P
Jan-21-1998	1	NA	NA	1,660	1.6	P
Jan-28-1998	1	NA	NA	2,270	1.5	P
Feb-04-1998	65	NA	NA	2,450	27.0	P
Feb-11-1998	65	NA	NA	2,940	39.2	P
Feb-18-1998	80	NA	NA	3,030	36.4	P
Feb-25-1998	65	NA	NA	3,370	40.4	P
Mar-04-1998	25	NA	NA	2,750	3.5	P
Mar-11-1998	15	NA	NA	799	3.9	P
Mar-18-1998	5	NA	NA	997	1.1	P
Mar-25-1998	15	NA	NA	593	1.5	P

Table 15. Weekly water quality monitoring at Station L (San Luis Canal at Henry Miller Road), 1998.

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Temperature	pH	Specific Conductance	Selenium (total)	Boron
DATA SOURCE	SLDMWA††	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	°C		µS/cm	µg/l	mg/l
Jan-07-1998	53	NA	NA	1,201	1.0	P
Jan-14-1998	78	NA	NA	1,014	1.8	P
Jan-21-1998	105	NA	NA	1,718	1.4	P
Jan-28-1998	61	NA	NA	1,520	1.5	P
Feb-04-1998	110	NA	NA	1,553	5.1	P
Feb-11-1998	121	NA	NA	2,260	8.3	P
Feb-18-1998	158	NA	NA	2,190	8.9	P
Feb-25-1998	150	NA	NA	2,310	10.5	P
Mar-04-1998	120	NA	NA	1,830	4.0	P
Mar-11-1998	117	NA	NA	2,150	5.4	P
Mar-18-1998	116	NA	NA	2,340	4.3	P
Mar-25-1998	126	NA	NA	1,990	3.0	P

Table 16. Weekly water quality monitoring at Station M (Santa Fe Canal at Henry Miller Road), 1998.

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Temperature	pH	Specific Conductance	Selenium (total)	Boron
DATA SOURCE	SLDMWA††	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	°C		µS/cm	µg/l	mg/l
Jan-07-1998	24	NA	NA	1,570	1.0	P
Jan-14-1998	47	NA	NA	1,812	1.4	P
Jan-21-1998	0	NA	NA	5,550	0.9	P
Jan-28-1998	16	NA	NA	2,020	1.3	P
Feb-04-1998	2	NA	NA	1,226	7.3	P
Feb-11-1998	6	NA	NA	2,350	13.0	P
Feb-18-1998	8	NA	NA	2,400	11.6	P
Feb-25-1998	17	NA	NA	2,020	8.0	P
Mar-04-1998	51	NA	NA	2,420	3.6	P
Mar-11-1998	63	NA	NA	2,170	5.4	P
Mar-18-1998	36	NA	NA	2,260	4.1	P
Mar-25-1998	33	NA	NA	1,950	2.8	P

Table 17. Weekly water quality monitoring at Station N (San Joaquin River at Crow's Landing), 1998.

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-02-1998	546	12.2	7.5	1,696	1.5	P
Jan-08-1998	651	12.2	7.9	1,573	3.1	P
Jan-15-1998	2,290	11.1	7.3	616	1.6	P
Jan-22-1998	4,330	11.1	7.7	542	0.9	P
Jan-28-1998	2,130	13.3	7.7	961	1.4	P
Feb-04-1998	9,770	12.8	7.3	382	1.0	P
Feb-11-1998	24,200	12.2	7.0**	335	0.8	P
Feb-19-1998	19,700	12.2	7.5	399	0.8	P
Feb-26-1998	20,100	15.0	7.7	431	1.1	P
Mar-05-1998	11,500	13.3	7.8	541	1.4	P
Mar-12-1998	9,660	15.0	7.8	572	1.9	P
Mar-19-1998	7,050	18.9	8.1	636	1.9	P
Mar-26-1998	7,780	17.8	8.2	435	1.7	P

Table 18. Summary of fathead minnow (*Pimephales promelas*) larvae survival in 7-day tests using water samples collected from April 1997 to March 1998. 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	%	%	%	%	%	%
April-97	95	100	95	98	88	83
May-97	95	100	95	100	93	100
June-97	93	98	95	93	90	90
July-97	100	93	98	98	100	98
August-97	88	85	95	78	83	98
September-97	98	90	93	85	83	90
October-97	88	88	85	60*	95	98
November-97	85	75*	88	88	98	98
December-97	90	50*	58*	83	88	85
January-98	100	40*	50*	90	90	95
February-98	93	43*	73*	80*	93	93
March-98	95	60*	68*	53*	95	84

Table 19. Summary of fathead minnow (*Pimephales promelas*) larvae growth in 7-day tests using water samples collected from April 1997 to March 1998. 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
April-97	1.11	1.02	1.06	1.15	1.05	0.83
May-97	0.85	0.91	0.95	0.89	0.88	0.80
June-97	0.66	0.69	0.71	0.72	0.68	0.73
July-97	0.97	0.80*	0.95	0.91	0.92	0.89
August-97	0.69	0.56	0.73	0.60	0.59	0.77
September-97	0.60	0.46	0.53	0.50	0.42	0.48
October-97	0.48*	0.44*	0.40*	0.34*	0.58	0.50
November-97	0.55*	0.57*	0.72	0.65*	0.76	0.71
December-97	0.60	0.38*	0.52	0.63	0.63	0.57
January-98	0.65	0.26*	0.30*	0.58	0.54	0.57
February-98	0.74	0.35*	0.53*	0.56*	0.70	0.59
March-98	0.67	0.31*	0.39*	0.30*	0.54	0.53

Table 20. Summary of *Daphnia magna* survival in 7-day tests using water samples collected from April 1997 to March 1998. 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	%	%	%	%	%	%
April-97	80	90	100	90	90	50
May-97	90	90	90	80	90	30
June-97	90	100	70	100	80	90
July-97	90	90	100	100	100	90
August-97	90	100	100	100	80	90
September-97	90	100	100	100	100	80
October-97	80	90	100	90	100	90
November-97	100	80	100	100	100	0
December-97	100	100	90	80	100	80
January-98	80	90	100	100	100	0
February-98	80	80	100	90	50†	0
March-98	100	90	100	100	100	0

Table 21. Summary of *Daphnia magna* reproduction in 7-day tests using water samples collected from April 1997 to March 1998. 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
April-97	23.6	24.4	24.6	16.3	12.9	10.0
May-97	30.6	33.8	34.0	21.6	17.2	20.0
June-97	50.9	58.8	41.1	50.2	29.6	31.6
July-97	35.6	28.1	33.2	27.7	19.1	17.1
August-97	55.8	55.4	53.1	54.1	40.7	44.3
September-97	33.0*	31.2*	45.8	47.1	39.7	23.2
October-97	42.2	37.9	41.7	34.8	34.9	32.0
November-97	37.3	28.6	34.0	30.0	22.0	21.5 (3)
December-97	46.0	44.5	41.2	32.7*	43.6	21.1
January-98	13.7*	21.8	18.5*	14.5*	27.4	0.0
February-98 (2)	67.0	70.5	69.9	61.3	39.3†	0.0
March-98	32.0	28.9	28.0	29.1	28.5	0.0

Table 22. Summary of *Selenastrum capricornutum* growth in 4-day tests using water samples collected from April 1997 to March 1998. 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
April-97	19.7*	35.4*	46.5	30.8*	78.5	62.9
May-97	22.4	12.6*	18.6*	16.8*	26.3	17.2
June-97	42.0*	55.6	44.6	44.4	54.2	57.9
July-97	41.9	72.5	47.6	66.6	45.1	60.2
August-97	56.2	61.6	43.0	52.6	47.5	59.9
September-97	21.5*	29.5	25.4	30.9	32.2	44.4
October-97	3.0*	42.3	47.4	43.9	50.4	50.3
November-97	23.8	19.6	23.8	29.0	15.8	31.3
December-97	14.8	14.2	24.2	19.2	6.3	25.0
January-98	1.04*	11.9	14.5	6.8	9.1	9.1
February-98	4.2*	7.9	10.9	11.8	8.3	17.1
March-98	5.4*	20.3	16.8	16.5	13.4	25.5

Table 23. Summary of selenium concentrations in grab water samples collected at study sites for use in laboratory toxicity tests, December 1997 to March 1998.

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
Dec-02-1997	32	<2	4	<2	<2
Dec-04-1997	32	<2	3	<2	<2
Dec-06-1997	27	<2	6	<2	<2
Jan-20-1998	75	<2	4	<2	<2
Jan-22-1998	92	<2	3	<2	<2
Jan-24-1998	64	<2	3	<2	<2
Feb-17-1998	47	<2	7	5	<2
Feb-19-1998	56	<2	8	5	<2
Feb-21-1998	63	<2	9	4	<2
Mar-10-1998	96	<2	15	4	<2
Mar-12-1998	100	<2	19	3	<2
Mar-14-1998	99	<2	21	2	<2

Table 24. Summary of sulfate concentrations in grab water samples collected at study sites for use in laboratory toxicity tests, December 1997 to March 1998.

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
Dec-02-1997	1,390	167	317	277	35
Dec-04-1997	1,440	166	299	297	57
Dec-06-1997	990	164	305	294	46
Jan-20-1998	1,560	138	208	421	71
Jan-22-1998	1,600	110	161	399	52
Jan-24-1998	1,490	121	181	428	40
Feb-17-1998	976	107	238	346	69
Feb-19-1998	1,000	119	230	406	61
Feb-21-1998	1,270	111	268	349	79
Mar-10-1998	1,870	206	434	337	80
Mar-12-1998	1,840	236	499	290	68
Mar-14-1998	1,760	271	548	272	76

Table 25. Summary of quarterly in situ bioassay results from December 1995 to August 1997.
Results are the number of live fathead minnows (*Pimephales promelas*) per number of fish recovered at the end of the 7 day deployment at each station (initial count of 80 used at each station).

See Table 26 for explanation of footnotes and agency abbreviations.

LOCATION	Windmill (4 day old larvae)	Station B (4 day old larvae)	Station D (4 day old larvae)	Station D (14 day old larvae)	Station F (4 day old larvae)	Station F (14 day old larvae)
DATA SOURCE	SLDMWA	SLDMWA	SLDMWA	SLDMWA	SLDMWA	SLDMWA
UNITS	# alive/total count	# alive/total count	# alive/total count	# alive/total count	# alive/total count	# alive/total count
December-1995 (4)	NT	NT	NT	NT	NT	NT
March-1996 (5)	80/80	NT	NT	44/44	NT	70/70
August-1996 (6)	NT	NT	13/19	22/29	28/40	20/49
November-1996 (7)	46/62	63/68	0/2	.	16/36	.
February-1997 (8)	NT	3/13	0/0	.	0/11	.
May-1997	64/66	0/0	0/24	.	5/9	.
August-1997 (9)	NT	38/38	27/31	.	0/8	.

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
.	Not applicable
<	less than
e	estimated value
P	pending, data not available at this time but will be available in the future
NA	not analyzed - operator error, data will not be available in the future
NP	data not provided - future unknown
NT	not tested
(2)	Increased reproduction for the February 1998 sampling period is due to increased nutrients added to the test water.
(3)	There were no surviving *D. magna* at test completion. Value represents reproduction that occurred prior to mortality.
(4)	In situ cages could not be deployed due to wet weather conditions.
(5)	Baseline results for 3/96 are for 14-day old larvae. There was no survival for the 24-hour old larvae.
(6)	Windmill station was dry due to water drainage. Use of plastic screened beakers for Station F during 8/96 with use of 4-day old larvae resulted in 0/39. Apparent cause of mortality was elevated temperature and sediment which was found in all cages and beakers.
(7)	Heavy silt accumulation was noted in Sites D and F cages and light silt accumulation was observed in both the Windmill site and Site B.
(8)	Moderate silt accumulation was noted in Sites B and F cages and light silt accumulation was observed in Site D.
(9)	No test deployment was done at the Windmill Site due to extreme conditions (stangant & pH>9.0). Site B replicate A was retrieved with no cork and replicate C lost its cork during retrieval. There were no surviving fish for a growth determination for Sit
*	Significantly reduced from Delta Mendota Canal ($p<0.05$)
**	possible calibration problem
†	DMC water failed to meet the survival (> 80%) and the 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 (1997 draft).