

GRASSLAND BYPASS PROJECT

MONTHLY DATA REPORT

April 1998

July 13, 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



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MONTHLY DATA REPORT

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

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow
DATA SOURCE	USBR
UNITS	cfs
Apr-01-1998	106.3
Apr-02-1998	95.4
Apr-03-1998	91.2
Apr-04-1998	106.7
Apr-05-1998	132.3
Apr-06-1998	134.5
Apr-07-1998	120.7
Apr-08-1998	106.7
Apr-09-1998	102.6
Apr-10-1998	101.8
Apr-11-1998	99.9
Apr-12-1998	101.4
Apr-13-1998	95.4
Apr-14-1998	91.5
Apr-15-1998	88.9
Apr-16-1998	89.3
Apr-17-1998	81.1
Apr-18-1998	79.6
Apr-19-1998	81.1
Apr-20-1998	76.9
Apr-21-1998	76.5
Apr-22-1998	81.4
Apr-23-1998	83.0
Apr-24-1998	77.7
Apr-25-1998	78.8
Apr-26-1998	75.8
Apr-27-1998	77.8
Apr-28-1998	75.0
Apr-29-1998	69.8
Apr-30-1998	65.7

Table 2. Continuous water monitoring at Station B (discharge from San Luis Drain), April 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
Apr-01-1998	109.9	14.7	5,770	98.2	58.2
Apr-02-1998	103.8	15.0	5,570	91.8	51.4
Apr-03-1998	94.4	14.5	5,730	96.6	49.2
Apr-04-1998	97.4	14.3	5,840	97.8	51.4
Apr-05-1998	111.8	14.9	5,750	94.2	56.8
Apr-06-1998	131.1	16.0	5,310	87.8	62.1
Apr-07-1998	132.1	16.6	4,500	63.9	45.5
Apr-08-1998	117.2	17.1	4,830	67.6	42.7
Apr-09-1998	104.7	17.8	5,400	83.4	47.1
Apr-10-1998	103.3	18.1	5,230	82.6	46.0
Apr-11-1998	98.5	16.5	5,810	103.0	54.7
Apr-12-1998	100.8	15.9	5,840	104.0	56.5
Apr-13-1998	100.9	15.4	5,920	122.0	66.4
Apr-14-1998	95.0	15.7	5,880	125.0	64.0
Apr-15-1998	90.3	16.3	5,910	120.0	58.4
Apr-16-1998	89.9	17.2	5,890	122.0	59.2
Apr-17-1998	87.3	18.0	5,860	126.0	59.3
Apr-18-1998	81.4	19.0	5,890	119.0	52.2
Apr-19-1998	80.9	19.9	5,690	103.0	44.9
Apr-20-1998	80.5	21.0	6,170	123.0	53.4
Apr-21-1998	78.9	22.2	6,090	123.0	52.3
Apr-22-1998	79.6	23.6	6,110	124.0	53.2
Apr-23-1998	82.2	22.6	6,000	122.0	54.1
Apr-24-1998	81.5	21.5	6,300	134.0	58.9
Apr-25-1998	77.1	19.5	5,690	106.0	44.1
Apr-26-1998	76.7	19.0	NA	106.0 e	43.8
Apr-27-1998	75.7	20.3	5,580	106.0	43.3
Apr-28-1998	78.2	22.1	5,610	104.0	43.9
Apr-29-1998	75.4	23.9	5,600	104.0	42.3
Apr-30-1998	70.1	24.4	5,540	103.0	38.9
Mean	92.9	18.4	5700	105.4	
Total					1,554

Load Limitation for April 1998 (lbs)	799
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**Table 3. Continuous water monitoring at Station D
(Mud Slough North downstream of drainage discharges), April 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
Apr-01-1998	375	13.1	3,120
Apr-02-1998	341	14.0	3,080
Apr-03-1998	323	13.5	3,070
Apr-04-1998	304	13.4	3,270
Apr-05-1998	293	15.1	3,600
Apr-06-1998	293	16.3	3,860
Apr-07-1998	286	16.4	3,630
Apr-08-1998	291	17.0	3,420
Apr-09-1998	290	17.4	2,740
Apr-10-1998	278	17.6	2,690
Apr-11-1998	265	15.8	3,330
Apr-12-1998	246	15.0	3,780
Apr-13-1998	233	15.1	3,950
Apr-14-1998	216	15.2	4,120
Apr-15-1998	198	15.9	3,980
Apr-16-1998	202	16.8	3,450
Apr-17-1998	209	17.5	2,730
Apr-18-1998	190	18.6	2,960
Apr-19-1998	166	19.7	3,630
Apr-20-1998	153	20.8	4,360
Apr-21-1998	147	22.0	4,480
Apr-22-1998	137	23.5	4,720
Apr-23-1998	126	22.0	4,770
Apr-24-1998	118	21.0	4,690
Apr-25-1998	121	19.4	4,960
Apr-26-1998	101	18.5	5,030
Apr-27-1998	93	20.4	4,620
Apr-28-1998	94	23.0	4,310
Apr-29-1998	94	24.6	4,460
Apr-30-1998	94	25.0	4,500

Table 4. Continuous water monitoring at Station F (Salt Slough at Highway 165), April 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
Apr-01-1998	402	13.2	1,940
Apr-02-1998	376	13.7	1,950
Apr-03-1998	362	13.6	1,970
Apr-04-1998	365	13.1	1,900
Apr-05-1998	388	14.3	1,740
Apr-06-1998	397	15.9	1,820
Apr-07-1998	384	16.2	1,850
Apr-08-1998	376	16.7	1,940
Apr-09-1998	342	17.4	1,970
Apr-10-1998	337	17.8	1,880
Apr-11-1998	350	16.2	1,840
Apr-12-1998	345	14.9	1,830
Apr-13-1998	332	15.1	1,840
Apr-14-1998	317	15.5	1,800
Apr-15-1998	301	15.7	1,660
Apr-16-1998	298	16.7	1,670
Apr-17-1998	293	17.7	1,710
Apr-18-1998	280	18.7	1,700
Apr-19-1998	269	19.5	1,750
Apr-20-1998	265	20.6	1,840
Apr-21-1998	262	21.9	1,720
Apr-22-1998	260	23.3	1,660
Apr-23-1998	245	21.8	1,650
Apr-24-1998	240	20.3	1,540
Apr-25-1998	241	18.9	1,470
Apr-26-1998	233	18.4	1,450
Apr-27-1998	233	20.2	1,420
Apr-28-1998	237	22.3	1,430
Apr-29-1998	241	23.8	1,450
Apr-30-1998	250	23.8	1,310
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Table 5. Continuous water monitoring at Station N (San Joaquin River at Crow's Landing), April 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
Apr-01-1998	13,500	12.3	387	1.3
Apr-02-1998	12,900	12.3	418	1.3
Apr-03-1998	12,500	12.3	422	1.4
Apr-04-1998	12,500	12.0	406	1.3
Apr-05-1998	12,700	12.6	387	1.2
Apr-06-1998	13,100	13.9	388	1.1
Apr-07-1998	13,600	14.3	380	1.2
Apr-08-1998	14,100	14.9	372	1.2
Apr-09-1998	14,600	15.5	339	1.0
Apr-10-1998	14,500	16.0	352	1.0
Apr-11-1998	14,800	15.0	346	1.1
Apr-12-1998	15,800	13.5	302	0.9
Apr-13-1998	16,500	13.4	281	0.9
Apr-14-1998	16,700	13.2	286	1.0
Apr-15-1998	16,700	13.5	288	1.0
Apr-16-1998	16,500	14.1	282	1.1
Apr-17-1998	16,000	14.8	287	1.0
Apr-18-1998	15,400	15.7	293	1.1
Apr-19-1998	14,700	16.4	285	1.0
Apr-20-1998	13,900	17.2	268	1.0
Apr-21-1998	13,500	18.2	274	0.8
Apr-22-1998	13,300	19.4	273	0.8
Apr-23-1998	13,100	19.0	268	0.9
Apr-24-1998	12,900	18.1	263	0.9
Apr-25-1998	12,600	17.3	265	1.0
Apr-26-1998	12,400	16.4	244	0.8
Apr-27-1998	12,300	17.5	253	0.9
Apr-28-1998	12,200	18.9	241	0.9
Apr-29-1998	12,000	20.0	239	0.9
Apr-30-1998	11,800	20.4	232	0.8

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
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
Apr-01-1998	106.3	NA	NA	2,760	230	95.6	92.6	P
Apr-08-1998	106.7	NA	NA	4,980	170	81.1	77.7	P
Apr-15-1998	88.9	NA	NA	5,770	170	129.0	130.0	P
Apr-22-1998	81.4	NA	NA	6,230	150	133.0	126.0	P
Apr-29-1998	69.8	NA	NA	5,470	249	106.0	105.0	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
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
Apr-02-1998	103.8	15.0	7.9	5,160	87	90.0	92.8	P
Apr-09-1998	104.7	16.7	8.3	5,550	75	94.6	93.0	P
Apr-16-1998	89.9	13.9	8.1	5,930	60	118.0	120.0	P
Apr-23-1998	82.2	22.2	8.2	6,070	56	119.0	119.0	P
Apr-30-1998	70.1	23.3	8.1	5,550	67	106.0	106.0	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
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
Apr-02-1998	.	14.4	8.0	1,272	1.0	P
Apr-09-1998	.	16.7	8.3	1,333	1.3	P
Apr-16-1998	.	13.9	8.4	1,937	0.9	P
Apr-23-1998	.	21.7	8.2	2,330	1.1	P
Apr-30-1998	.	23.9	7.8	3,170	0.8	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
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
Apr-02-1998	341	14.4	8.0	2,360	21.8	P
Apr-09-1998	290	16.7	8.1	2,660	26.6	P
Apr-16-1998	202	15.0	8.2	3,630	46.0	P
Apr-23-1998	126	22.2	8.2	4,690	70.0	P
Apr-30-1998	94	23.3	8.0	5,240	96.8	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
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
Apr-02-1998	376	14.4	7.3	2,050	1.4	P
Apr-09-1998	342	17.2	7.7	2,100	1.4	P
Apr-16-1998	298	16.1	7.5	1,950	1.4	P
Apr-23-1998	245	22.2	7.5	1,730	1.0	P
Apr-30-1998	250	21.1	7.2	1,400	0.8	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
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
Apr-02-1998	.	13.3	7.7	217	0.5	P
Apr-09-1998	.	17.2	8.0	168	0.5	P
Apr-16-1998	.	12.8	8.4	124	0.3	P
Apr-23-1998	.	18.9	7.3	108	0.3	P
Apr-30-1998	.	20.0	6.8	110	0.2	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
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
Apr-02-1998	.	13.3	7.5	793	3.1	P
Apr-09-1998	.	18.9	8.0	681	2.4	P
Apr-16-1998	.	15.0	7.7	611	3.3	P
Apr-23-1998	.	23.3	8.0	520	2.5	P
Apr-30-1998	.	20.0	7.2	405	2.1	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
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
Apr-01-1998	0	NA	NA	980	11.5	P
Apr-08-1998	0	NA	NA	4,470	9.8	P
Apr-15-1998	0	NA	NA	6,270	7.3	P
Apr-22-1998	5	NA	NA	245	1.7	P
Apr-29-1998	5	NA	NA	209	1.1	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 ^{1†}	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	°C		µS/cm	µg/l	mg/l
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
Apr-01-1998	0	NA	NA	5,400	2.8	P
Apr-08-1998	0	NA	NA	2,140	1.8	P
Apr-15-1998	0	NA	NA	2,670	2.2	P
Apr-22-1998	0	NA	NA	2,690	2.3	P
Apr-29-1998	10	NA	NA	256	1.9	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 ^{1†}	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	°C		µS/cm	µg/l	mg/l
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
Apr-01-1998	89	NA	NA	386	3.2	P
Apr-08-1998	106	NA	NA	2,560	3.3	P
Apr-15-1998	69	NA	NA	2,410	3.4	P
Apr-22-1998	84	NA	NA	1,570	1.8	P
Apr-29-1998	64	NA	NA	1,290	1.4	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
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
Apr-01-1998	18	NA	NA	2,780	3.3	P
Apr-08-1998	6	NA	NA	1,870	3.4	P
Apr-15-1998	0	NA	NA	1,980	3.1	P
Apr-22-1998	2	NA	NA	1,029	1.8	P
Apr-29-1998	0	NA	NA	681	1.7	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
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
Apr-02-1998	12,900	13.3	7.5	450	1.4	P
Apr-09-1998	14,600	18.3	7.8	421	1.1	P
Apr-16-1998	16,500	13.9	7.7	265	1.0	P
Apr-22-1998	13,300	22.2	7.8	288	1.0	P
Apr-30-1998	11,800	22.2	7.5	236	0.9	P

Table 18. Summary of fathead minnow (*Pimephales promelas*) larvae survival in 7-day tests using water samples collected from May 1997 to April 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	%	%	%	%	%	%
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
April-98	100	95	95	100	85	100

Table 19. Summary of fathead minnow (*Pimephales promelas*) larvae growth in 7-day tests using water samples collected from May 1997 to April 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
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
April-98	0.67	0.53	0.59	0.58	0.47	0.54

Table 20. Summary of *Daphnia magna* survival in 7-day tests using water samples collected from May 1997 to April 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	%	%	%	%	%	%
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
April-98	100	100	90	100	100	0

Table 21. Summary of *Daphnia magna* reproduction in 7-day tests using water samples collected from May 1997 to April 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
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
April-98	18.7	25.2	19.6	20.2	10.2	0.0

Table 22. Summary of *Selenastrum capricornutum* growth in 4-day tests using water samples collected from May 1997 to April 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
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	1.0*	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
April-98	19.0	36.1	25.8	34.8	23.7	32.5

Table 23. Summary of selenium concentrations in grab water samples collected at study sites for use in laboratory toxicity tests, January to April 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
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
Apr-07-1998	85	<2	31	<2	<2
Apr-09-1998	120	<2	29	<2	<2
Apr-11-1998	140	<2	42	<2	<2

Table 24. Summary of sulfate concentrations in grab water samples collected at study sites for use in laboratory toxicity tests, January to April 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
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
Apr-07-1998	1,620	340	893	346	48
Apr-09-1998	1,890	232	676	389	46
Apr-11-1998	2,100	242	878	363	55

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 <i>D. magna</i> 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 (stagnant & 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).