GRASSLAND BYPASS PROJECT

MONTHLY DATA REPORT

March 2012

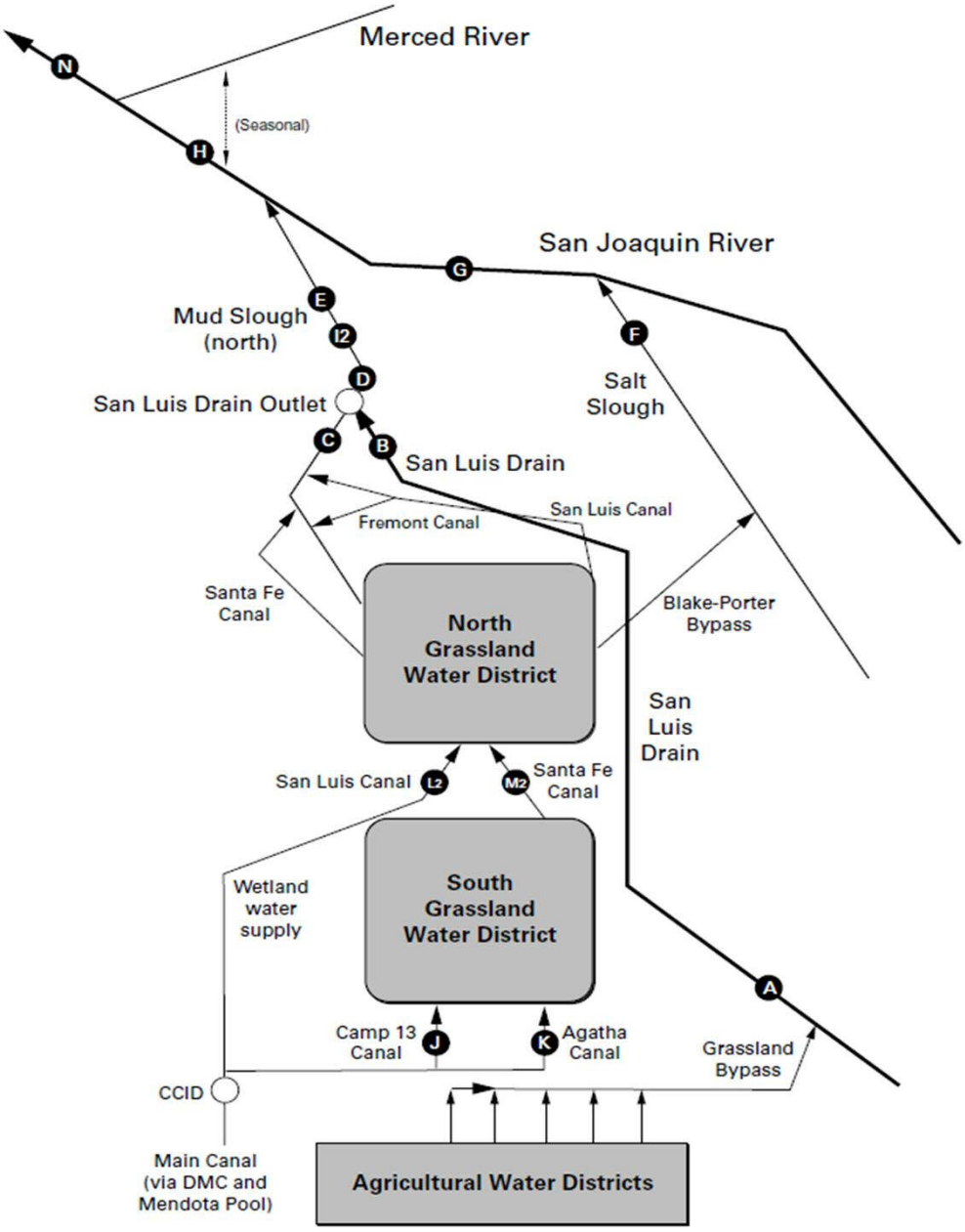
August 2012

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
(Seasonal)
N
H
San Joaquin River
G
E
Mud Slough
(north)
I2
D
San Luis Drain Outlet
C
B
San Luis Drain
F
Salt
Slough
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
CCID
Main Canal
(via DMC and
Mendota Pool)
Agricultural Water Districts

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MONTHLY DATA REPORT

LIST OF TABLES FOR MONTHLY REPORT

Table 1. Continuous water monitoring at Station A (inflow to San Luis Drain), March 2012.

See Table 28 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Temperature	Specific Conductance	Salt Load
DATA SOURCE	SLDMWA	SLDMWA	SLDMWA	Computed
UNITS	cfs	°C	µS/cm	tons
Mar-01-2012	22	11.3	3,020	134
Mar-02-2012	16	11.8	3,470	113
Mar-03-2012	17	12.7	4,030	140
Mar-04-2012	14	14.7	4,390	126
Mar-05-2012	14	15.7	4,560	124
Mar-06-2012	13	12.8	4,690	125
Mar-07-2012	13	9.2	4,770	128
Mar-08-2012	13	11.8	4,790	128
Mar-09-2012	14	13.9	4,800	134
Mar-10-2012	11	14.5	4,850	105
Mar-11-2012	11	14.2	4,730	105
Mar-12-2012	13	14.8	4,630	123
Mar-13-2012	13	14.4	4,510	117
Mar-14-2012	16	15.5	4,310	135
Mar-15-2012	21	17.0	4,020	170
Mar-16-2012	18	16.6	3,980	140
Mar-17-2012	46	13.5	3,780	350
Mar-18-2012	75	11.9	4,330	646
Mar-19-2012	57	12.5	5,470	619
Mar-20-2012	35	15.1	5,610	392
Mar-21-2012	23	17.1	5,690	266
Mar-22-2012	22	17.7	5,980	269
Mar-23-2012	22	15.6	5,980	261
Mar-24-2012	12	16.1	6,080	145
Mar-25-2012	13	14.8	6,100	163
Mar-26-2012	17	15.7	6,100	206
Mar-27-2012	16	15.4	5,900	194
Mar-28-2012	11	16.3	6,160	141
Mar-29-2012	14	17.1	6,280	169
Mar-30-2012	12	18.6	6,350	151
Mar-31-2012	10	16.2	6,310	132
Mean	20	14.7	5,020	6,151
Total Acre-feet	1,245			
Salinity Load Value (Dry Year, March)				**13,653**

Table 2a. Continuous water monitoring at Stations B and B2 (San Luis Drain Terminus), March 2012.

See Table 28 for explanation of footnotes and agency abbreviations.

PARAMETER	San Luis Drain Outlet Flow	Temperature	Boron	Specific Conductance	Selenium (total)	Selenium (total) Load
DATA SOURCE	SLDMWA♦	SLDMWA	USBR	SLDMWA	USBR	Computed
UNITS	cfs	°C	mg/L	µS/cm	µg/L	lbs
Mar-01-2012	27	9.5	8.8	3,340	26.0	3.7
Mar-02-2012	26	10.2	6.9	2,970	24.0	3.4
Mar-03-2012	22	11.7	5.5	2,360	20.0	2.4
Mar-04-2012	22	14.4	5.6	2,610	20.0	2.4
Mar-05-2012	19	16.0	5.8	2,480	18.0	1.8
Mar-06-2012	15	11.9	6.9	2,750	26.0	2.1
Mar-07-2012	17	9.5	NA	3,340	NA	NA
Mar-08-2012	19	10.7	8.6	3,420	30.0	3.1
Mar-09-2012	17	13.7	8.9	3,680	29.0	2.7
Mar-10-2012	17	13.1	8.6	3,710	28.0	2.6
Mar-11-2012	15	13.1	8.7	3,840	28.0	2.2
Mar-12-2012	14	13.6	9.1	3,940	28.0	2.2
Mar-13-2012	16	13.3	9.2	4,040	26.0	2.2
Mar-14-2012	16	14.3	8.9	3,990	26.0	2.2
Mar-15-2012	18	17.8	9.3	4,070	37.0	3.5
Mar-16-2012	24	15.3	8.8	4,160	30.0	3.8
Mar-17-2012	25	8.0	9.1	3,900	29.0	3.9
Mar-18-2012	53	9.3	9.0	3,800	34.0	9.7
Mar-19-2012	75	9.8	8.6	3,520	33.0	13.3
Mar-20-2012	60	13.6	8.4	3,570	32.0	10.3
Mar-21-2012	40	15.9	9.8	4,100	35.0	7.6
Mar-22-2012	27	16.2	9.6	4,200	36.0	5.3
Mar-23-2012	25	13.0	9.9	4,170	33.0	4.5
Mar-24-2012	23	12.9	9.5	4,000	36.0	4.5
Mar-25-2012	16	12.1	9.0	3,790	35.0	3.0
Mar-26-2012	15	13.7	9.5	3,790	35.0	2.8
Mar-27-2012	18	14.9	9.6	3,950	33.0	3.2
Mar-28-2012	17	15.9	10.0	4,160	30.0	2.8
Mar-29-2012	13	15.8	10.0	4,170	31.0	2.2
Mar-30-2012	14	18.6	10.0	4,220	28.0	2.1
Mar-31-2012	13	13.4	9.6	4,070	28.0	2.0
Mean	24	13.3	8.7	3,680	29.5	3.9
Total Acre-feet	**1,460**					
Total (lbs)						**117**

Load Limitation for March 2012 (lbs)	**184**

♦To improve the accuracy of flow measurements, Reclamation and the San Luis & Delta-Mendota Water Authority, with technical assistance from the USGS, are measuring flow at the San Luis Drain Outlet. The Outlet is located two miles from Station B. Discharge is measured as stage over a sharp-crested weir, identical to Station A. This is a simpler and more accurate method that will not be altered by sediment accumulation. Water quality data are still collected at the old Site B.

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

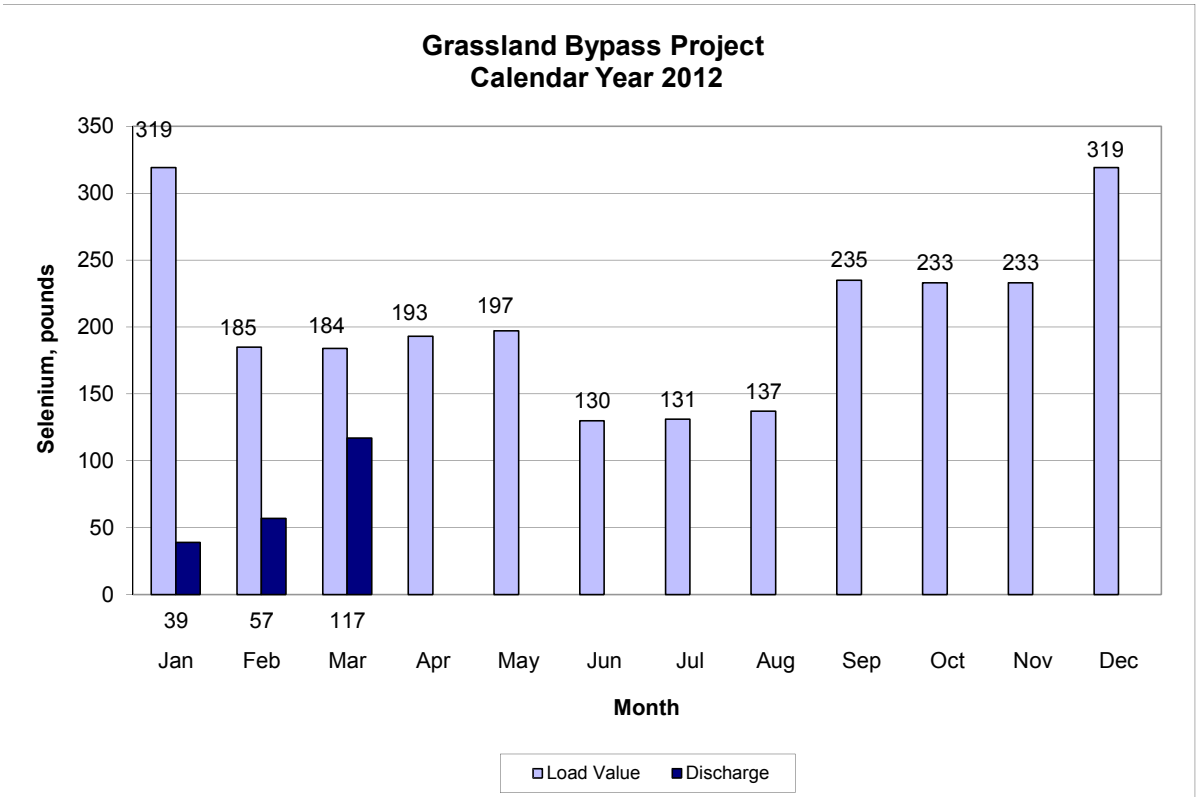

Table 3. Continuous water monitoring at Station D (Mud Slough North downstream of drainage discharges), March 2012.

See Table 28 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Temperature	Specific Conductance
DATA SOURCE	USGS	USGS	USGS
UNITS	cfs	°C	µS/cm
Mar-01-2012	136	11.6	2,700
Mar-02-2012	182	11.8	2,340
Mar-03-2012	190	12.6	2,210
Mar-04-2012	172	14.3	2,340
Mar-05-2012	144	15.7	2,380
Mar-06-2012	154	15.0	2,350
Mar-07-2012	149	11.4	2,490
Mar-08-2012	168	11.9	2,480
Mar-09-2012	166	13.4	2,520
Mar-10-2012	145	14.6	2,770
Mar-11-2012	129	15.2	2,780
Mar-12-2012	138	15.6	2,700
Mar-13-2012	130	14.9	2,830
Mar-14-2012	119	15.0	2,850
Mar-15-2012	114	16.3	2,930
Mar-16-2012	104	16.3	3,250
Mar-17-2012	117	14.2	3,130
Mar-18-2012	189	12.6	2,860
Mar-19-2012	227	12.6	3,070
Mar-20-2012	204	14.4	3,080
Mar-21-2012	164	16.2	3,140
Mar-22-2012	142	17.6	2,950
Mar-23-2012	121	17.0	3,000
Mar-24-2012	106	16.8	3,150
Mar-25-2012	86	15.6	3,150
Mar-26-2012	63	16.1	3,460
Mar-27-2012	74	15.7	3,280
Mar-28-2012	70	16.1	3,280
Mar-29-2012	57	16.8	3,550
Mar-30-2012	73	18.2	3,380
Mar-31-2012	62	17.5	3,530
Mean	132	14.9	2,900

Table 4. Continuous water monitoring at Station F (Salt Slough at Highway 165), March 2012.

See Table 28 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Temperature	Specific Conductance
DATA SOURCE	USGS	USGS	USGS
UNITS	cfs	°C	µS/cm
Mar-01-2012	194	11.5	1,780
Mar-02-2012	201	11.8	1,740
Mar-03-2012	205	12.5	1,750
Mar-04-2012	204	13.6	1,740
Mar-05-2012	200	15.1	1,770
Mar-06-2012	194	14.6	1,850
Mar-07-2012	183	11.8	1,900
Mar-08-2012	172	11.7	1,920
Mar-09-2012	183	13.1	1,880
Mar-10-2012	178	14.5	1,860
Mar-11-2012	173	15.0	1,870
Mar-12-2012	174	15.1	1,820
Mar-13-2012	177	14.7	1,790
Mar-14-2012	183	14.7	1,770
Mar-15-2012	177	16.1	1,780
Mar-16-2012	184	16.3	1,730
Mar-17-2012	202	14.6	1,770
Mar-18-2012	230	12.8	1,750
Mar-19-2012	256	12.1	1,640
Mar-20-2012	264	13.6	1,610
Mar-21-2012	248	15.6	1,720
Mar-22-2012	221	17.1	1,840
Mar-23-2012	213	16.6	1,910
Mar-24-2012	204	16.3	1,980
Mar-25-2012	181	15.3	2,030
Mar-26-2012	175	15.4	1,990
Mar-27-2012	176	15.4	1,940
Mar-28-2012	161	15.9	1,960
Mar-29-2012	154	16.8	1,940
Mar-30-2012	137	18.1	2,060
Mar-31-2012	140	17.3	1,970
Mean	192	14.7	1,840

Table 5. Continuous water monitoring at Station N (San Joaquin River at Crow's Landing), March 2012.

See Table 28 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Temperature	Boron	Specific Conductance	Selenium (total)
DATA SOURCE	USGS	USGS	USBR	USGS	USBR
UNITS	cfs	°C	mg/L	µS/cm	µg/L
Mar-01-2012	643	11.9	NA	1,680	NA
Mar-02-2012	657	12.1	1.1	1,680	1.6
Mar-03-2012	706	12.7	1.0	1,680	1.3
Mar-04-2012	776	14.0	1.1	1,680	1.3
Mar-05-2012	779	15.1	1.0	1,610	1.1
Mar-06-2012	729	15.0	1.0	1,610	0.9
Mar-07-2012	720	12.4	0.9	1,630	0.9
Mar-08-2012	724	12.5	1.1	1,670	0.9
Mar-09-2012	775	13.7	1.1	1,710	1.0
Mar-10-2012	804	14.6	1.1	1,710	0.9
Mar-11-2012	804	15.1	1.1	1,700	1.0
Mar-12-2012	777	15.4	1.1	1,710	0.9
Mar-13-2012	739	15.1	1.0	1,680	0.9
Mar-14-2012	723	14.6	1.1	1,700	1.0
Mar-15-2012	729	15.9	1.1	1,710	1.0
Mar-16-2012	707	16.6	1.1	1,690	1.0
Mar-17-2012	748	15.0	1.1	1,700	1.4
Mar-18-2012	797	13.5	1.0	1,680	1.2
Mar-19-2012	1,000	13.5	1.0	1,610	1.3
Mar-20-2012	1,160	14.5	1.1	1,600	2.3 U
Mar-21-2012	1,180	15.6	1.0	1,560	1.8
Mar-22-2012	1,090	16.9	1.0	1,450	1.7
Mar-23-2012	956	16.7	1.0	1,480	1.4
Mar-24-2012	876	16.6	1.0	1,550	1.2
Mar-25-2012	835	15.9	1.1	1,570	1.2
Mar-26-2012	813	16.0	1.0	1,550	1.0
Mar-27-2012	747	16.0	1.0	1,590	0.8
Mar-28-2012	722	16.1	1.0	1,630	1.0
Mar-29-2012	679	17.1	1.1	1,700	1.1
Mar-30-2012	656	18.1	1.0	1,720	0.9
Mar-31-2012	658	18.3	1.0	1,740	0.9
Mean	797	15.0	1.0	1,640	1.1

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

See Table 28 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Total Suspended Solids	Specific Conductance	Selenium (total)	Boron
DATA SOURCE	SLDMWA	Panoche DD	USBR	USBR	USBR
		Grab sample	Composite	Composite	Composite
UNITS	cfs	mg/L	µS/cm	µg/L	mg/L
Jan-02-2012	10	20	5,260	33	8.7
Jan-09-2012	8	<10	5,110	26	8.7
Jan-16-2012	10	11	5,250	33	9.2
Jan-23-2012	16	36	5,500	28	9.8
Jan-30-2012	7	20	4,390	20	6.3
Feb-06-2012	15	120	4,320	17	7.1
Feb-13-2012	9	123	5,570	33	9.2
Feb-20-2012	18	114	4,780	26	8.2
Feb-27-2012	27	268	5,730	32	9.0
Mar-05-2012	14	80	6,510	38	12.0
Mar-12-2012	13	25	5,680	37	10.0
Mar-19-2012	57	131	6,060	36	11.0
Mar-26-2012	17	97	6,400	39	11.0

Note: Weekly results for specific conductance, selenium, and boron from composite of seven daily samples.

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

See Table 28 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Total Suspended Solids	Temperature	pH	Specific Conductance	Selenium (total)	Boron
DATA SOURCE	SLDMWA	Panoche DD	USBR	USBR	USBR	USBR	USBR
UNITS	cfs	mg/L	°C	.	µS/cm	µg/L	mg/L
Jan-05-2012	16	15	10.0	7.5	4,840	38.0	8.7
Jan-12-2012	14	18	9.7	7.8	4,180	27.0	6.5
Jan-17-2012	17	18	7.9	7.7	4,060	14.0	6.7
Jan-24-2012	21	31	10.5	7.6	3,710	22.0	5.2
Jan-31-2012	13	11	13.2	7.9	4,420	17.0	7.5
Feb-07-2012	21	27	11.4	7.7	4,040	15.0	6.7
Feb-17-2012	25	<10	11.6	7.9	3,600	11.0	5.4
Feb-21-2012	27	31	13.3	8.0	5,040	26.0	8.1
Feb-28-2012	31	47	12.3	8.6	5,130	23.0	8.6
Mar-06-2012	15	23	14.3	8.2	4,740	29.0	7.2
Mar-13-2012	16	30	14.3	7.9	5,520	27.0	9.2
Mar-21-2012	40	56	15.2	7.7	5,460	34.0	10.0
Mar-28-2012	17	43	14.4	8.2	5,450	29.0	10.0

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

See Table 28 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow		Temperature	pH	Specific Conductance	Selenium (total)	Boron
DATA SOURCE	calculated ++		USBR	USBR	USBR	USBR	USBR
UNITS	cfs		°C	.	µS/cm	µg/L	mg/L
Jan-05-2012	113	.	9.0	8.1	1,600	0.5	1.2
Jan-12-2012	118	.	8.7	8.2	1,700	< 0.4	1.2
Jan-17-2012	103	.	7.6	8.2	1,750	0.4	1.3
Jan-24-2012	124	.	11.1	8.1	1,750	< 0.4	1.4
Jan-31-2012	96	.	12.9	8.2	1,900	0.7	1.4
Feb-07-2012	89	.	11.8	8.6	2,080	0.4	1.7
Feb-17-2012	88	.	11.1	8.2	2,140	0.5	1.6
Feb-21-2012	86	.	13.1	8.4	2,130	0.7	1.7
Feb-28-2012	79	.	13.2	8.0	1,840	0.7	1.9
Mar-06-2012	148	.	14.6	8.4	2,140	0.9	1.8
Mar-13-2012	123	.	13.9	8.2	2,410	0.6	2.0
Mar-21-2012	129	.	15.7	8.0	2,350	0.8	2.0
Mar-28-2012	82	.	14.4	8.3	2,610	0.7	2.2

++ 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 28 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Temperature	Turbidity	pH	Specific Conductance	Selenium (total)	Boron
DATA SOURCE	USGS	USBR	USBR	USBR	USBR	USBR	USBR
UNITS	cfs	°C	NTU	.	µS/cm	µg/L	mg/L
Jan-05-2012	129	9.7	15.7	7.9	2,110	5.1	2.1
Jan-12-2012	132	9.0	15.5	7.9	2,030	3.2	1.8
Jan-17-2012	120	7.8	13.7	8.1	2,150	2.1	2.0
Jan-24-2012	145	11.1	19.5	8	2,130	3.2	2.0
Jan-31-2012	109	13.0	25.6	7.9	2,270	2.9	2.0
Feb-07-2012	110	11.8	26.9	7.9	2,540	3.1	2.8
Feb-17-2012	113	11.6	32.9	8.2	2,490	2.6	2.4
Feb-21-2012	113	13.4	32.2	8.2	2,770	4.4	2.8
Feb-28-2012	110	13.1	40.4	8.2	3,250	5.9	3.8
Mar-06-2012	163	14.5	59.9	8.1	2,340	2.4	2.1
Mar-13-2012	139	13.9	56.6	8.2	2,860	3.6	2.8
Mar-21-2012	169	16.0	51.7	7.9	3,110	8.0	3.8
Mar-28-2012	99	14.7	49.8	8.3	3,250	6.3	3.7

Table 10. Weekly water quality monitoring at Station I2 (Mud Slough backwater downstream of Station D).

See Table 28 for explanation of footnotes and agency abbreviations.

PARAMETER		Temperature	Turbidity	pH	Specific Conductance	Selenium	Boron
DATA SOURCE		USBR	USBR	USBR	USBR	USBR	USBR
UNITS		°C	NTU	.	µS/cm	µg/L	mg/L
Jan-05-2012	.	9.4	13	7.9	2,200	5.0	2.2
Jan-12-2012	.	9.2	12	7.9	2,190	3.3	1.8
Jan-17-2012	.	8.4	18	7.9	2,340	2.1	2.0
Jan-24-2012	.	14.4	32	7.9	2,340	3.1	2.1
Jan-31-2012	.	13.6	61	7.9	2,850	2.9	2.2
Feb-07-2012	.	11.8	191	7.8	2,980	2.9	2.8
Feb-17-2012	.	13.2	39	8.1	2,640	2.5	2.4
Feb-21-2012	.	13.3	49	8.1	2,940	4.5	3.0
Feb-28-2012	.	13.7	58	8.3	2,470	5.5	3.8
Mar-06-2012	.	14.4	133	8.1	2,830	2.8	2.4
Mar-13-2012	.	13.9	51	8.1	2,960	3.6	2.8
Mar-21-2012	.	16.6	107	7.9	3,360	8.5	3.7
Mar-28-2012	.	14.4	35	8.2	4,020	6.2	4.1

Table 11. Weekly water quality monitoring at Station F (Salt Slough at Lander Avenue).

See Table 28 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Temperature	pH	Specific Conductance	Selenium (total)	Boron
DATA SOURCE	USGS	USBR	USBR	USBR	USBR	USBR
UNITS	cfs	°C	.	µS/cm	µg/L	mg/L
Jan-05-2012	54	NA	NA	NA	NA	NA
Jan-12-2012	54	NA	NA	NA	NA	NA
Jan-17-2012	71	NA	NA	NA	NA	NA
Jan-24-2012	92	NA	NA	NA	NA	NA
Jan-31-2012	138	NA	NA	NA	NA	NA
Feb-07-2012	190	11.4	7.0	1,460	0.6	0.6
Feb-17-2012	272	11.6	7.3	1,230	0.5	0.6
Feb-21-2012	253	12.1	7.4	1,520	0.6	0.7
Feb-28-2012	226	NA	NA	NA	NA	NA
Mar-06-2012	194	15.1	7.2	1,820	0.8	0.9 U
Mar-13-2012	177	14.2	6.6	1,820	0.6	0.9
Mar-21-2012	248	14.8	7.4	1,750	0.8	0.9 U
Mar-28-2012	161	14.7	7.0	1,980	0.4	0.9 U

Site inaccessible due to construction, no grab sample taken starting November 22, 2011 through January 31, 2012.

Table 12. Weekly water quality monitoring at Station G (San Joaquin River at Fremont Ford).

See Table 28 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Temperature	pH	Specific Conductance	Selenium (total)	Boron
DATA SOURCE	USGS	USBR	USBR	USBR	USBR	USBR
UNITS	cfs	°C	.	µS/cm	µg/L	mg/L
Jan-05-2012	83	9.1	7.9	2,570	0.7	0.9
Jan-12-2012	82	9.0	8.0	2,640	< 0.4	1.0
Jan-17-2012	100	7.9	7.9	2,190	< 0.4	0.8
Jan-24-2012	156	10.3	8.0	1,700	0.6	0.7
Jan-31-2012	168	12.0	8.0	1,600	0.6	0.6
Feb-07-2012	214	10.7	8.0	1,530	0.6	0.6
Feb-17-2012	284	10.8	8.2	1,500	0.6	0.6
Feb-21-2012	276	12.4	8.3	1,670	0.5	0.7
Feb-28-2012	268	12.6	8.1	1,630	0.8	0.8
Mar-06-2012	256	14.1	8.2	1,860	0.5	0.7
Mar-13-2012	228	13.7	8.2	1,980	0.4	0.8
Mar-21-2012	498	15.0	8.1	1,230	0.7	0.5
Mar-28-2012	232	14.6	8.3	2,110	0.4	0.8

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

See Table 28 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	.	.	Specific Conductance	Selenium (total)	Boron
DATA SOURCE	SLDMWA[††]	.	.	Panoche DD	Panoche DD	Panoche DD
UNITS	cfs	.	.	µS/cm	µg/L	mg/L
Jan-03-2012	30			666	0.5	0.3
Jan-09-2012	30	.	.	708	0.4	0.3
Jan-17-2012	30	.	.	677	0.5	0.2
Jan-23-2012	30	.	.	706	0.9	0.4 U
Jan-30-2012	30	.	.	783	1.2	0.3
Feb-06-2012	30	.	.	730	1.1	0.3
Feb-13-2012	20	.	.	712	1.1	0.3
Feb-21-2012	20	.	.	840	1.5	0.4
Feb-27-2012	20	.	.	794	1.6	0.4
Mar-05-2012	0	.	.	767	1.3	0.4
Mar-12-2012	0	.	.	850	1.8	0.4
Mar-19-2012	0	.	.	930	1.9	0.5
Mar-26-2012	0	.	.	462	1.0	0.2

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

See Table 28 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	.	.	Specific Conductance	Selenium (total)	Boron
DATA SOURCE	SLDMWA[††]	.	.	Panoche DD	Panoche DD	Panoche DD
UNITS	cfs	.	.	µS/cm	µg/L	mg/L
Jan-03-2012	50	.	.	589	1.3 U	0.3
Jan-09-2012	70	.	.	665	0.7	0.3
Jan-17-2012	70	.	.	671	0.4	0.2
Jan-23-2012	70	.	.	711	0.7	0.3
Jan-30-2012	55	.	.	750	1.0	0.3
Feb-06-2012	45	.	.	707	0.7	0.2
Feb-13-2012	45	.	.	723	0.7	0.3
Feb-21-2012	45	.	.	799	1.1	0.3
Feb-27-2012	0	.	.	805	1.4 U	0.4
Mar-05-2012	0	.	.	1,010	1.1	0.8 U
Mar-12-2012	0	.	.	2,910	0.5	6.9 U
Mar-19-2012	0	.	.	2,100	0.8	4.3 U
Mar-26-2012	0	.	.	1,930	0.7	3.7 U

Table 15. Weekly water quality monitoring at Station L2 (San Luis Canal at splits).

See Table 28 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	.	.	Specific Conductance	Selenium (total)	Boron
DATA SOURCE	SLDMWA††	.	.	Panoche DD	Panoche DD	Panoche DD
UNITS	cfs	.	.	µS/cm	µg/L	mg/L
Jan-03-2012	NA	.	.	1,280	1.1	1.3 U
Jan-09-2012	NA	.	.	777	0.5	0.4
Jan-17-2012	NA	.	.	1,400	0.8	1.2
Jan-23-2012	NA	.	.	352	<0.4	0.3
Jan-30-2012	NA	.	.	1,640	1.2	1.6 U
Feb-06-2012	NA	.	.	1,620	1.2	1.3
Feb-13-2012	NA	.	.	1,600	1.3	1.5
Feb-21-2012	NA	.	.	975	1.3	0.5
Feb-27-2012	NA	.	.	1,650	1.5	1.6
Mar-05-2012	NA	.	.	2,060	2.6 U	2.1
Mar-12-2012	NA	.	.	1,930	2.2 U	2.0
Mar-19-2012	NA	.	.	2,470	2.2U	2.6
Mar-26-2012	NA	.	.	1,750	1.4	2.1

Table 16. Weekly water quality monitoring at Station M2 (Santa Fe Canal at weir).

See Table 28 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	.	.	Specific Conductance	Selenium (total)	Boron
DATA SOURCE	SLDMWA††	.	.	Panoche DD	Panoche DD	Panoche DD
UNITS	cfs	.	.	µS/cm	µg/L	mg/L
Jan-03-2012	NA	.	.	1,200	1.1	1.2
Jan-09-2012	NA	.	.	1,250	0.6	1.2
Jan-17-2012	NA	.	.	1,390	0.6	1.3
Jan-23-2012	NA	.	.	1,220	0.7	1.2
Jan-30-2012	NA	.	.	1,320	1.0	1.2
Feb-06-2012	NA	.	.	1,440	1.1	1.3
Feb-13-2012	NA	.	.	1,640	1.3	1.6
Feb-21-2012	NA	.	.	1,650	1.4	1.4
Feb-27-2012	NA	.	.	1,580	1.5	1.5
Mar-05-2012	NA	.	.	2,040	1.3	2.0
Mar-12-2012	NA	.	.	2,240	1.0	2.3
Mar-19-2012	NA	.	.	2,390	1.3	2.5
Mar-26-2012	NA	.	.	2,280	1.3	2.5

Table 17. Weekly water quality monitoring at Station H1 (Above Newman WW (previously SJR at Hills Ferry)).

(Collected data intended for use with biological monitoring.)

See Table 28 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-11-2012	.	.	.	2,320	1.6	1.5
Jan-18-2012	.	.	.	2,350	1.2	1.5
Feb-01-2012	.	.	.	2,190	1.3	1.4
Feb-08-2012	.	.	.	2,160	1.4	1.4
Feb-15-2012	.	.	.	1,980	1.0	1.2
Feb-22-2012	.	.	.	2,090	1.8	1.5
Feb-29-2012	.	.	.	2,410	2.1	1.7
Mar-07-2012	.	.	.	2,280	1.6	1.5
Mar-14-2012	.	.	.	2,190	1.2	1.4
Mar-21-2012	.	.	.	1,960	2.5	1.5
Mar-28-2012	.	.	.	2,580	2.0	1.8

Table 18. Weekly water quality monitoring at Station H2 (San Joaquin River at Hills Ferry).

(Collected data intended for use with biological monitoring.)

See Table 28 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	.	.	Specific Conductance	Selenium (total)	Boron
DATA SOURCE	USGS	.	.	SLDMWA	SLDMWA	SLDMWA
UNITS	cfs	.	.	µS/cm	µg/L	mg/L
Jan-11-2012	606	.	.	2,330	1.6	1.5
Jan-18-2012	566	.	.	2,350	1.2	1.5
Feb-01-2012	622	.	.	2,210	1.2	1.4
Feb-08-2012	642	.	.	2,150	1.3	1.4
Feb-15-2012	690	.	.	1,970	1.0	1.2
Feb-22-2012	682	.	.	2,170	1.7	1.5
Feb-29-2012	652	.	.	2,370	2.2	1.7
Mar-07-2012	409	.	.	2,280	1.5	1.5
Mar-14-2012	416	.	.	1,530	0.9	0.1
Mar-21-2012	702	.	.	1,920	2.6	1.5
Mar-28-2012	415	.	.	NA	NA	NA

Table 19. Weekly water quality monitoring at Station N (San Joaquin River at Crow's Landing).

See Table 28 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Temperature	pH	Specific Conductance	Selenium (total)	Boron
DATA SOURCE	USGS	USBR	USBR	USBR	USBR	USBR
UNITS	cfs	°C	°C	°C	µg/L	mg/L
Jan-05-2012	590	9.5	8.1	1,380	0.9	0.8
Jan-12-2012	534	9.3	8.1	1,550	1.3	0.8
Jan-17-2012	510	7.8	8.1	1,540	0.7	0.9
Jan-24-2012	686	10.6	8.0	1,350	1.0	0.8
Jan-31-2012	616	12.2	7.8	1,480	0.9	0.8
Feb-07-2012	600	11.4	7.9	1,570	0.8	0.8
Feb-17-2012	700	11.3	8.0	1,430	0.7	0.8
Feb-21-2012	662	12.8	8.0	1,590	1.0	0.9
Feb-28-2012	629	12.8	8.0	1,750	1.4	1.0
Mar-06-2012	729	14.3	8.3	1,640	0.9	0.9
Mar-13-2012	739	13.9	8.1	1,660	0.9	1.0
Mar-21-2012	1,180	14.8	7.8	1,340	1.9 U	1.0
Mar-28-2012	722	14.9	8.1	1,680	1.2	0.9

Table 20. Weekly water quality monitoring at Central California Irrigation District Main Canal at Russell Avenue (MER510).

See Table 28 for explanation of footnotes and agency abbreviations.

PARAMETER				Specific Conductance	Selenium (total)	Boron
DATA SOURCE	.	.	.	USBR	USBR	USBR
UNITS	.	.	.	µS/cm	µg/L	mg/L
Jan-03-2012	.	.	.	531	2.3 U	0.4
Jan-09-2012	.	.	.	574	2.5 U	0.4
Jan-17-2012	.	.	.	638	2.1 U	0.4
Jan-23-2012	.	.	.	803	0.9	0.4
Jan-30-2012	.	.	.	780	1.0	0.3
Feb-06-2012	.	.	.	694	0.8	0.2
Feb-13-2012	.	.	.	632	0.8	0.2
Feb-21-2012	.	.	.	837	1.3	0.4
Feb-27-2012	.	.	.	628	1.2	0.3
Mar-05-2012	.	.	.	742	1.0	0.4
Mar-12-2012	.	.	.	933	1.6	0.5
Mar-19-2012	.	.	.	947	2.0	0.6
Mar-26-2012	.	.	.	551	0.7	0.2

Table 21. Summary of fathead minnow (*Pimephales promelas*) larvae survival in 7-day tests using water samples collected from April 2011 to March 2012. Each value is the mean of 4 replicates with 10 fish in each replicate.

See Table 28 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-2011	93	95	88	60	63†	93
May-2011	95	83	95	78	80	95
Jun-2011	95	98	98	93	93	95
Jul-2011	33*	100	95	100	98	90
Aug-2011	90	88	95	93	70	90
Sep-2011	79*	88	90	95	95	95
Oct-2011	90	98	98	100	98	100
Nov-2011	100	93	98	93	100	100
Dec-2011	100	98	98	95	95	98
Jan-2012	85	75	78	80	78	85
Feb-2012	98	90	100	100	98	98
Mar-2012	98	98	100	98	95	95

Table 22. Summary of fathead minnow (*Pimephales promelas*) larvae growth in 7-day tests using water samples collected from April 2011 to March 2012. Each value is the mean of 4 replicates with 10 fish in each replicate.

See Table 28 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-2011	0.37	0.40	0.40	0.33	0.22	0.29
May-2011	0.48	0.48	0.50	0.40	0.38	0.43
Jun-2011	0.36	0.34	0.36	0.36	0.33	0.33
Jul-2011	0.06*	0.26	0.25	0.28	0.27	0.26
Aug-2011	0.26	0.25	0.26	0.28	0.25	0.29
Sep-2011	0.28	0.30	0.33	0.34	0.32	0.32
Oct-2011	0.45	0.34	0.41	0.42	0.37	0.38
Nov-2011	0.50	0.47	0.47	0.46	0.48	0.44
Dec-2011	0.42	0.38	0.44	0.39	0.37	0.36
Jan-2012	0.37	0.33	0.33	0.33	0.34	0.35
Feb-2012	0.38	0.33	0.36	0.38	0.35	0.39
Mar-2012	0.56	0.46	0.45	0.44	0.41	0.49

Table 23. Summary of *Daphnia magna* survival in 7-day tests using water samples collected from April 2011 to March 2012. Each value is the mean of 10 replicates with 1 animal in each replicate.

See Table 28 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-2011	100	100	80	100	100	100
May-2011	70	80	70	60	10†	80
Jun-2011	100	100	100	80	90	90
Jul-2011	90	80	100	90	100	100
Aug-2011	90	90	90	100	90	90
Sep-2011	100	90	70	100	90	90
Oct-2011	90	60	100	90	100	100
Nov-2011	100	100	100	100	100	100
Dec-2011	90	80	80	70	80	90
Jan-2012	90	100	100	90	100	100
Feb-2012	100	90	100	90	100	100
Mar-2012	100	100	80	80	90	90

Table 24. Summary of *Daphnia magna* reproduction in 7-day tests using water samples collected from April 2011 to March 2012. Each value is the mean of 10 replicates with 1 animal in each replicate.

See Table 28 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-2011	28.6	23.1	25.4	29.9	28.6	29.2
May-2011	44.8	36.6	45.7	24.8	22.9	37.9
Jun-2011	66.0	58.0	62.8	38.9*	50.3	42.2
Jul-2011	31.7	43.8	40.9	21.7	30.5	25.3
Aug-2011	38.1	32.8	40.4	31.4	31.0	34.3
Sep-2011	41.3	33.1	37.2	35.0	28.4	29.6
Oct-2011	26.9	13.2*	29.9	20.8	24.2	27.1
Nov-2011	51.9	46.8	48.1	39.3	44.6	27.0
Dec-2011	24.3	32.1	36.7	24.0	28.0	34.1
Jan-2012	34.1	41.4	35.7	29.2	33.9	28.5
Feb-2012	58.0	48.9	63.8	54.9	58.6	52.0
Mar-2012	58.3	49.7	41.8	40.8	45.1	31.5

Table 25. Summary of *Selenastrum capricornutum* growth in 4-day tests using water samples collected from April 2011 to March 2012. Each value is the mean of 4 replicates.

See Table 28 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-2011	22.3	33.6	33.2	30.4	20.5	21.2
May-2011	23.7	27.7	22.9	24.5	10.0	23.6
Jun-2011	20.4	31.2	29.1	32.4	23.8	19.9
Jul-2011	20.8	26.0	18.2	20.3	22.8	19.1
Aug-2011	20.4*	23.5	23.2	24.3	27.4	19.0
Sep-2011	7.1*	24.9	3.3*	29.2	17.8	2.0††††
Oct-2011	20.1	26.6	33.3	25.9	22.9	18.8
Nov-2011	14.7*	32.5	30.7	26.7	22.2	26.3
Dec-2011	17.4	36.6	36.0	35.6	25.1	2.9††††
Jan-2012	25.1	33.6	37.5	32.9	27.8	28.5
Feb-2012	25.0	36.4	34.9	4.9*	29.8	23.5
Mar-2012	17.9*	27.6	17.8*	26.7	25.6	24.0

Table 26. Summary of selenium concentrations in grab water samples collected at study stations for use in laboratory toxicity tests, January 2012 to March 2012.

See Table 28 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-09-2012	31	< 0.4	3.1	< 0.4	< 0.4
Jan-11-2012	28	< 0.4	3.4	< 0.4	< 0.4
Jan-13-2012	21	< 0.4	3.0	< 0.4	< 0.4
Feb-06-2012	15	< 0.4	3.3	0.8	< 0.4
Feb-08-2012	13	< 0.4	2.6	0.5	< 0.4
Feb-10-2012	11	< 0.4	2.2	0.5	< 0.4
Mar-05-2012	17	0.6	2.5	0.6	< 0.4
Mar-07-2012	28	0.8	3.4	0.5	0.6
Mar-09-2012	28	0.5	3.1	0.8	0.7

Table 27. Summary of total suspended solids concentrations in grab water samples collected at study stations for use in laboratory toxicity tests, January 2012 to March 2012.

See Table 28 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-09-2012	23	24	31	29	< 1
Jan-11-2012	27	14	16	27	1
Jan-13-2012	29	27	39	25	2
Feb-06-2012	50	40	43	75	14
Feb-08-2012	47	32	35	52	12
Feb-10-2012	46	24	26	63	6
Mar-05-2012	32	80	67	55	12
Mar-07-2012	152	75	75	50	7
Mar-09-2012	26	22	68	51	4

Table 28. 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.
L	Result may be biased low. Sample was not preserved in the field
†	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
D	Sample was dechlorinated
PPD	Panoche Drainage Distraict
U	results are determined to be an outlier at the time of data validation