

**Grassland Bypass Project  
Interim Baseline Monitoring Program**

**Monthly Data Report**

**September 2014**

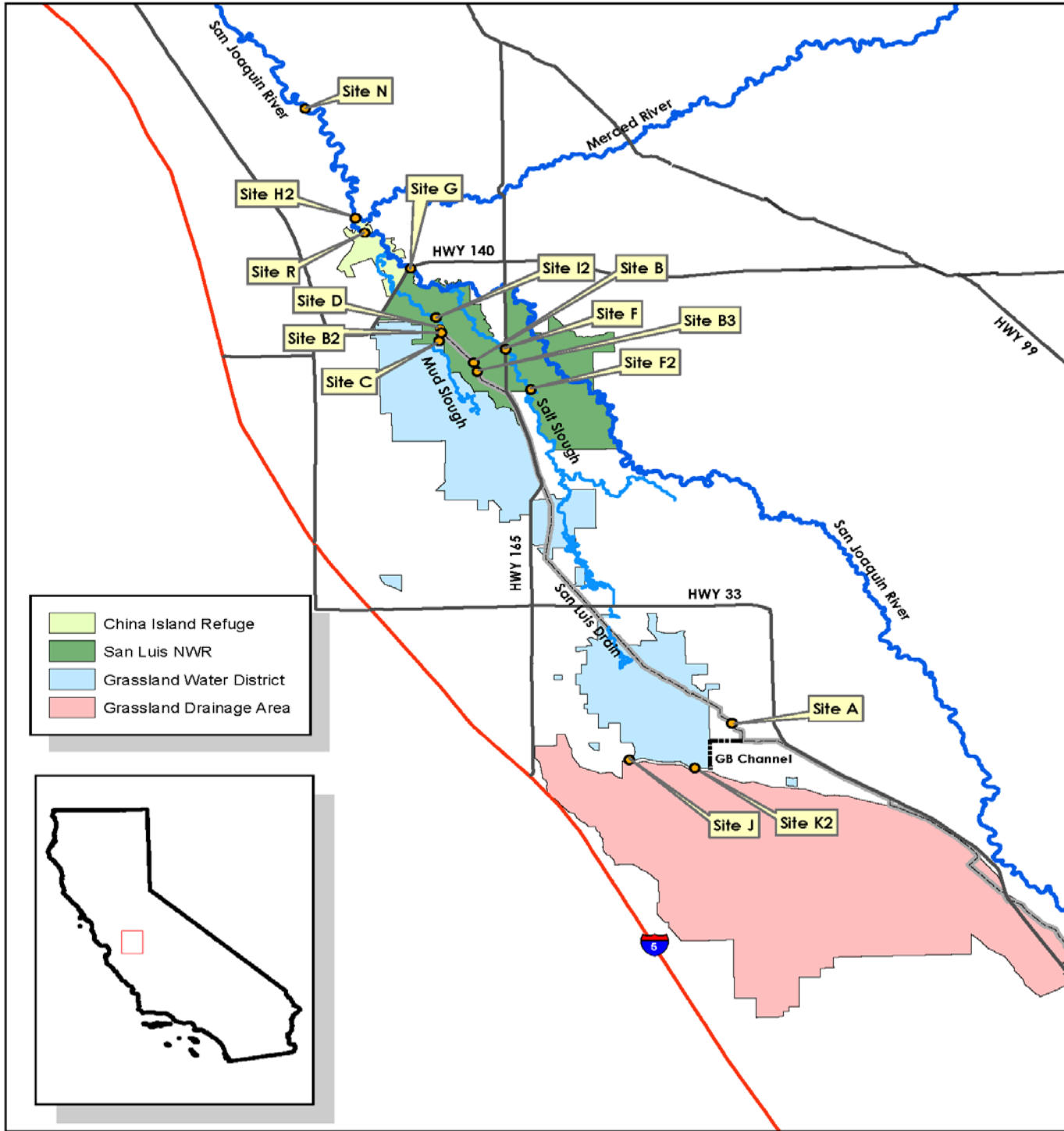


**A Cooperative Effort Of:**

U.S. Bureau of Reclamation  
Central Valley Regional Water Quality Control Board  
U.S. Fish and Wildlife Service  
National Marine Fisheries Service  
California Department of Fish and Wildlife  
San Luis & Delta-Mendota Water Authority  
U.S. Environmental Protection Agency  
U.S. Geological Survey

**Compiled by San Francisco Estuary Institute**

Figure 1. Map of the Grassland Bypass Project area



## Grassland Bypass Project

Monitoring Sites

0 2.5 5 10 Miles



Grassland Bypass Project  
NAD 1983 California Zone 10  
U.S. Bureau of Reclamation



**GRASSLAND BYPASS PROJECT  
MONTHLY DATA REPORT**

**LIST OF TABLES FOR MONTHLY REPORT**

- Figure 1. Map of the 2014 Grasslands Bypass Monitoring Program
- Figure 2. Monthly selenium discharges from the terminus of the San Luis Drain into Mud Slough compared to load values.
- Table 1. Water monitoring of inflow to the San Luis Drain (Station A)
- Table 2a. Water monitoring of San Luis Drain Discharge into Mud Slough (north) (Station B2 and B3)
- Table 2b. Water quality monitoring at Station Be (discharge from San Luis Drain) (Station B3)
- Table 3a. Water monitoring in Mud Slough (north) below San Luis Drain discharge (Station D)
- Table 3b. Water quality monitoring in Mud Slough (north) below San Luis Drain Discharge (Station D)
- Table 4. Water quality monitoring in Mud Slough (north) above San Luis Drain Discharge (Station C)
- Table 5. Water quality monitoring in Mud Slough (north) backwater below San Luis Drain Discharge (Station I2)
- Table 6a. Water monitoring in Salt Slough at Highway 165 (Station F)
- Table 6b. Water quality monitoring in Salt Slough at Highway 165 (Station F)
- Table 7a. Water quality monitoring in Grasslands Wetland Water Supply Channels (Station J Camp 13 Ditch Headworks)
- Table 7b. Water quality monitoring in Grasslands Wetland Water Supply Channels (Station K Agatha Canal Headworks)
- Table 8a. Water monitoring in the San Joaquin River above the Merced River (Station H2)
- Table 9. Water quality monitoring in the San Joaquin River above Merced River at China Island Refuge (Station R)
- Table 10. Water monitoring in the San Joaquin River at Fremont Ford (Station G)
- Table 11a. Water monitoring in the San Joaquin River at Crows Landing (Station N)
- Table 11b. Water quality monitoring in the San Joaquin River at Crows Landing (Station N)
- Table 12. Summary of fathead minnow (*Pimephales promelas*) larvae survival in 7-day tests □
- Table 13. Summary of fathead minnow (*Pimephales promelas*) larvae growth in 7-day tests
- Table 14. Summary of *Daphnia magna* survival in 7-day tests using water samples
- Table 15. Summary of *Daphnia magna* reproduction in 7-day tests
- Table 16. Summary of *Selenastrum capricornutum* growth in 4-day tests
- Table 17. Summary of selenium concentrations in grab water samples collected at study stations for use in toxicity tests
- Table 18. Summary of total suspended solids concentrations in grab water samples
- Table 19. Explanation of footnotes and agency abbreviations

# Grassland Bypass Project

Table 1a. Water monitoring of inflow to the San Luis Drain (Station A)

PARAMETER	Flow	Temperature	Specific Conductance	Total Dissolved Solids	Total Suspended Solids	Total Selenium	Daily Salt Load
DATA SOURCE	SLDMWA	SLDMWA	SLDMWA	Calculated	SLDMWA	SLDMWA/USBR	Calculated
UNITS	cfs	°C	µS/cm	mg/L	mg/L	µg/L	tons
Sep-01-2014	0	26.0	6,390	4,726		11	0
Sep-02-2014	0	25.4	6,260	4,631	47	8	0
Sep-03-2014	0	24.0	6,120	4,527		7	0
Sep-04-2014	0	22.5	6,460	4,784		8	0
Sep-05-2014	0	21.6	6,370	4,715		8	0
Sep-06-2014	0	22.1	6,590	4,873		8	0
Sep-07-2014	0	21.5	6,870	5,085		7	0
Sep-08-2014	0	23.7	7,050	5,217	71	9	0
Sep-09-2014	0	22.3	7,320	5,420		8	0
Sep-10-2014	0	24.1	7,710	5,704		8	0
Sep-11-2014	0	25.0	8,000	5,921		13	0
Sep-12-2014	0	25.2	8,730	6,464		14	0
Sep-13-2014	0	25.6	9,100	6,737		13	0
Sep-14-2014	0	25.9	8,400	6,215		10	3
Sep-15-2014	2	24.8	7,760	5,745		10	29
Sep-16-2014	1	24.2	7,330	5,423	107	10	8
Sep-17-2014	0	24.3	7,390	5,470		9	0
Sep-18-2014	0	23.7	7,370	5,450		8	0
Sep-19-2014	0	23.7	7,550	5,586		6	0
Sep-20-2014	0	24.5	7,760	5,746		6	0
Sep-21-2014	0	23.1	7,900	5,848		9	0
Sep-22-2014	0	23.3	7,950	5,883	33	6	0
Sep-23-2014	0	24.4	8,200	6,071		7	0
Sep-24-2014	0	23.5	8,570	6,342		12	0
Sep-25-2014	0	20.4	9,020	6,674		14	0
Sep-26-2014	0	20.1	9,300	6,883		11	0
Sep-27-2014	0	19.8	9,740	7,208	35	9	0
Sep-28-2014	0	20.5	9,990	7,389		8	0
Sep-29-2014	0	20.8	10,000	7,418		8	0
Sep-30-2014	0	21.2	10,100	7,456		8	0

**Notes:**

See Table 19 for explanation of footnotes and agency abbreviations.

Preliminary Results

Site A Selenium data are not collected by Reclamation and have been deemed unreliable by Reclamation Staff.

Table 1b. Monthly Averages and Totals

	Total Flow	Average Temperature	Average Specific Conductance	Average Total Dissolved Solids	Average Total Suspended Solids	Average Selenium	Salt Load	Salt Load Objective
	Calculated	Calculated	Calculated	Calculated	Calculated	Calculated	Calculated	UA3
	acre-feet	°C	µS/cm	mg/L	mg/L	µg/L	tons	tons
Jan-2014	650	9.8	7,320	5,418	46	26	4,620	4,283
Feb-2014	1,040	13.6	6,860	5,074	136	31	6,930	6,779
Mar-2014	600	17.3	7,190	5,323	96	27	3,990	8,031
Apr-2014	360	18.3	7,950	5,112	134	30	1,870	5,910
May-2014	280	21.9	6,200	4,589	97	36	1,690	5,792
Jun-2014	430	24.0	7,000	5,179	154		2,970	5,991
Jul-2014	280	26.1	6,860	5,079	128		1,980	6,055
Aug-2014	15	25.1	6,810	3,037	87		119	5,373
Sep-2014	10	23.2	7,910	5,854	59		40	2,838
Cumulative Total	3,655						24,209	51,052

**Notes:**

Salt load objective based on 2014 critical year type

Table 2a. Water monitoring of San Luis Drain Discharge into Mud Slough (north)  
Station B2 (Terminus at Mud Slough) and Station B3 (Gun Club Road)

PARAMETER	Flow (B2)	Temperature (B2)	Specific Conductance (B2)	Total Suspended Solids (B2)	Boron (B3)	Total Selenium (B3)	Daily Selenium Load
DATA SOURCE	SLDMWA♦	SLDMWA	SLDMWA	SLDMWA/USBR	USBR	USBR	Calculated
UNITS	cfs	°C	µS/cm	mg/L	mg/L	µg/L	lbs
Sep-01-2014	3	26.6	12,784		28.0	10.0	0.2
Sep-02-2014	3	28.1	13,138	41	28.0	9.7	0.2
Sep-03-2014	2	23.2	13,508		28.0	10.0	0.1
Sep-04-2014	1	24.8	13,265		28.0	9.5	0.1
Sep-05-2014	1	24.5	13,208		30.0	9.6	0.0
Sep-06-2014	0	25.1	13,364		30.0	8.2	0.0
Sep-07-2014	0	24.2	13,626		29.0	8.0	0.0
Sep-08-2014	0	23.5	13,827	48	31.0	6.5	0.0
Sep-09-2014	0	21.9	13,970		32.0	6.6	0.0
Sep-10-2014	0	24.7	13,986		29.0	7.3	0.0
Sep-11-2014	0	26.3	13,882		30.0	7.1	0.0
Sep-12-2014	0	27.2	13,788		29.0	7.1	0.0
Sep-13-2014	0	27.4	13,773		29.0	6.2	0.0
Sep-14-2014	0	27.7	13,769		29.0	7.7	0.0
Sep-15-2014	0	27.5	13,725		30.0	8.6	0.0
Sep-16-2014	0	24.2	13,876	92	31.0	9.6	0.0
Sep-17-2014	0	26.1	14,090		30.0	9.8	0.0
Sep-18-2014	0	25.4	14,281		32.0	11.0	0.0
Sep-19-2014	0	24.5	14,630		29.0	15.7	0.0
Sep-20-2014	0	25.3	14,750		29.0	20.8	0.0
Sep-21-2014	0	24.2	14,920		28.0	21.0	0.0
Sep-22-2014	0	23.4	15,209	67	28.0	22.0	0.0
Sep-23-2014	0	24.9	15,282		29.0	26.0	0.0
Sep-24-2014	0	24.6	15,165		30.0	21.5	0.0
Sep-25-2014	0	17.5	14,894		29.0	11.9	0.0
Sep-26-2014	0	18.2	14,604		30.0	12.7	0.0
Sep-27-2014	0	19.5	14,554	83	28.0	15.1	0.0
Sep-28-2014	0	20.1	14,577		28.0	12.3	0.0
Sep-29-2014	0	21.0	14,820		30.0	10.2	0.0
Sep-30-2014	0	21.3	15,436		27.0	10.8	0.0

**Notes:**

See Table 19 for explanation of footnotes and agency abbreviations.  
Preliminary Data

Table 2b. Monthly Averages and Totals

	Flow (B2)	Average Temperature (B2)	Average Specific Conductance (B2)	Average Total Suspended Solids	Average Boron (B3)	Average Selenium	Selenium Load	Selenium Load Objective
	Calculated	Calculated	Calculated	Calculated	Calculated	Calculated	Calculated	UA3
	acre-feet	°C	µS/cm	mg/L	mg/L	µg/L	lbs	lbs
Jan-2014	970	10.1	5,290	13	10.2	14.0	39	151
Feb-2014	1270	12.6	6,100	139	12.6	26.0	88	93
Mar-2014	900	15.0	5,980	50	11.8	20.8	63	92
Apr-2014	490	18.1	6,570	72	13.0	13.8	19	101
May-2014	400	22.1	6,740	46	12.8	13.6	17	105
Jun-2014	410	25.2	8,150	60	14.6	16.9	25	69
Jul-2014	180	28.1	9,710	28	19.1	11.3	5	70
Aug-2014	21	26.1	11,400	43	25.5	10.1	1	75
Sep-2014	10	24.1	14,200	66	29.3	11.7	0	57
Cumulative Load Totals	4,651						257	813

**Notes:**

Selenium load objective based on 2014 critical year type

Table 2c. Water quality monitoring at Station B3 (discharge from San Luis Drain)

PARAMETER	Physicals					Total Selenium	Total Boron	Total Molybdenum
	Dissolved Oxygen	pH	Specific Conductance	Temperature	Turbidity			
	DATA SOURCE	DATA SOURCE	DATA SOURCE	DATA SOURCE	DATA SOURCE			
UNITS	mg/L	units	µS/cm	°C	NTU	ug/L	mg/L	ug/L
Jul-02-2014		8.9	8,580	26.2	21.2	16	17	
Jul-11-2014	8.5	8.8	8,730	26.9	16.5	13	19	
Jul-18-2014	4.4	9.1	10,600	25.4	13.9	12	24	
Jul-25-2014	6.3	8.8	7,460	26.0	20.1	9	16	
Jul-31-2014	7.5	8.4	10,200	29.6		12	23	9.5
Aug-07-2014	7.2	8.4	10,600	28.0	9.8	10	24	
Aug-15-2014	9.2	7.8	11,200	24.5	14.5	10	27	
Aug-22-2014	9.4	8.2	12,000	26.8		9	28	
Sep-04-2014	9.6	8.3	13,000	23.9	21.1	9	30	6.2
Sep-19-2014	10.3	8.1	12,300	23.5	56.7	7	27	
Sep-26-2014	12.4	8.2	12,200	21.7	83.3	8	27	

Notes:

	Nutrients				
	Nitrates as N (Dissolved)	Ammonia as N	Total Kjeldahl Nitrogen	Total Phosphorous as P	Ortho-phosphate as P
	DATA SOURCE	DATA SOURCE	DATA SOURCE	DATA SOURCE	DATA SOURCE
UNITS	mg/L	mg/L	mg/L	mg/L	mg/L
Jan-09-2014	0.5	0.1	1.4	0.094 V	0.015 T
Feb-27-2014	3.7 T	0.2 L	1.7	0.095 T	<0.010
Mar-26-2014	<0.02	0.1	2.6	0.190 T	<0.010
Apr-25-2014					
May-08-2014	0.2	0.3	3.0	0.190 T	< 0.010
Jun-26-2014	4.8	1.1 U	3.5	0	< 0.050
Jul-31-2014	< 0.02	0.2 V	3.7	0.150	< 0.010
Aug-31-2014					
Sep-04-2014	< 0.05	0.1	3.9	0.130 T	< 0.010 T

Notes:

Results of the Interim Monitoring Program Oct 2013 - Feb 2014

	General Minerals						
	Calcium	Magnesium	Potassium	Sodium	Chloride (Dissolved)	Sulfate (Dissolved)	Total Organic Carbon
	DATA SOURCE	DATA SOURCE	DATA SOURCE	DATA SOURCE	DATA SOURCE	DATA SOURCE	DATA SOURCE
UNITS	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Jan-09-2014	270	110	6.8	620	670	1,400	NA
Feb-27-2014	220	100	4.0	880	750	1,500	8.5

Notes:

	Total Metals								
	Arsenic	Boron	Cadmium	Copper	Lead	Mercury	Molybdenum	Nickel	Zinc
	DATA SOURCE	DATA SOURCE	DATA SOURCE	DATA SOURCE	DATA SOURCE	DATA SOURCE	DATA SOURCE	DATA SOURCE	DATA SOURCE
UNITS	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Jan-09-2014	5.5	9,000	<1.0	41	<2.5	100	31.0	17.0	<5.0
Feb-27-2014	<10		<1.0	<50	<2.5	<100	24.0	23.0	<10

Notes:

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

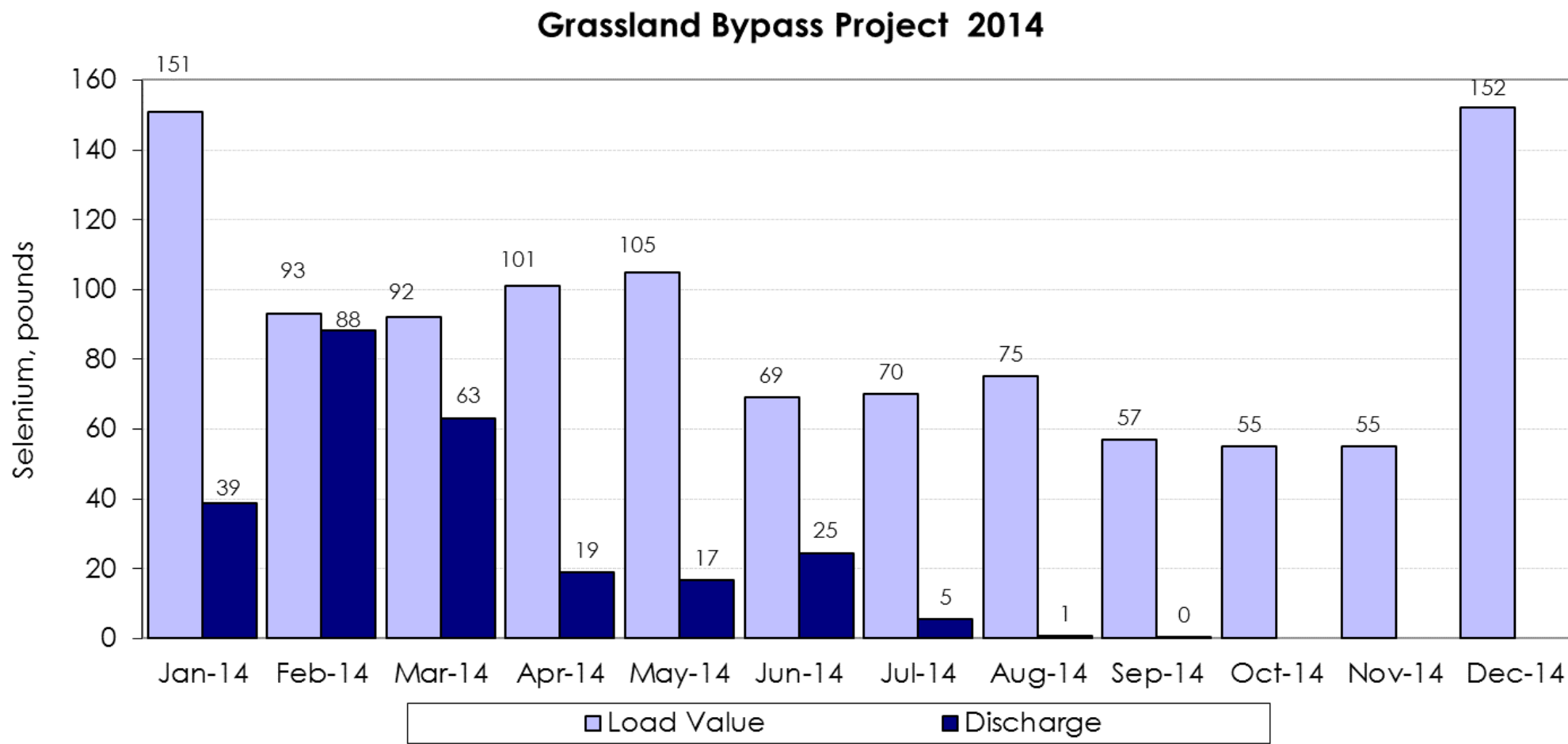


Table 3a. Water monitoring in Mud Slough (north) below San Luis Drain Discharge Station D

PARAMETER	Flow	Temperature	Specific Conductance
DATA SOURCE	USGS	USGS	USGS
UNITS	cfs	°C	µS/cm
Sep-01-2014	1	25.1	
Sep-02-2014	1	25.5	
Sep-03-2014	1	24.4	8,770
Sep-04-2014	1	25.0	6,730
Sep-05-2014	0	25.2	4,760
Sep-06-2014	0	25.4	3,350
Sep-07-2014	0	25.0	2,480
Sep-08-2014	0	24.8	1,800
Sep-09-2014	0	23.5	1,410
Sep-10-2014	0	24.0	1,360
Sep-11-2014	0	24.3	1,300
Sep-12-2014	1	24.7	1,140
Sep-13-2014	0	25.1	1,170
Sep-14-2014	0	25.6	1,320
Sep-15-2014	1	25.6	1,130
Sep-16-2014	1	24.4	997
Sep-17-2014	1	24.4	1,250
Sep-18-2014	1	24.4	1,460
Sep-19-2014	1	24.4	1,400
Sep-20-2014	1	24.5	1,470
Sep-21-2014	1	24.3	1,390
Sep-22-2014	1	23.9	1,420
Sep-23-2014	2	24.1	1,350
Sep-24-2014	3	23.9	1,260
Sep-25-2014	2	21.8	1,280
Sep-26-2014	3	20.0	1,560
Sep-27-2014	3	20.8	1,220
Sep-28-2014	2	20.8	1,470
Sep-29-2014	2	21.0	1,670
Sep-30-2014	1	21.5	1,760

**Notes:**

See Table 19 for explanation of footnotes and agency abbreviations.  
Preliminary Data

Table 3b. Monthly Averages

PARAMETER	Total Flow	Temperature	Specific Conductance
DATA SOURCE	Calculated	USGS	USGS
UNITS	acre-feet	°C	µS/cm
January	3,360	11	3,120
February	4,250	14	3,600
March	5,390	17	3,230
April	1,960	20	4,130
May	270	22	6,530
June	400	25	7,960
July	290	27	8,810
August	20	26	6,200
September	60	24	2,060
October			
November			
December			



Table 3c. Water quality monitoring in Mud Slough (north) below San Luis Drain discharge (Station D)

PARAMETER	Physicals					Total Selenium	Total Boron	Total Molybdenum
	Dissolved Oxygen	pH	Specific Conductance	Temperature	Turbidity			
	USBR	USBR	USBR	USBR	USBR			
DATA SOURCE	USBR	USBR	USBR	USBR	USBR	USBR	USBR	USBR
UNITS	mg/L	units	µS/cm	°C	NTU	ug/L	mg/L	ug/L
Jul-02-2014		9.0	8,740	27.9	29.8	16.9	17.0	
Jul-11-2014	6.7	8.5	9,710	30.5	13.8	12.7	20.0	
Jul-18-2014	5.2	8.7	10,000	26.9	9.2	9.9	21.0	
Jul-25-2014	7.9	9.0	9,210	27.4	14.6	10.2	20.0	
Jul-31-2014	7.4	8.7	9,000	29.2		9.8	19.0	11
Aug-07-2014	10.1	8.2	6,680	27.2	11.3	3.7	12.0	
Aug-15-2014	10.6	8.3	4,160	24.9	51.9	1.6	4.6	
Aug-22-2014	8.8	8.3	5,810	27.1		2.0	6.6	
Sep-04-2014	10.0	8.2	7,150	24.5	22.7	3.5	14.0	11
Sep-19-2014	10.0	8.6	1,420	28.7	9.7	0.7	1.9	
Sep-26-2014	13.3	8.1	1,590	21.8	12.9	0.7	1.9	

Notes:

	Nutrients				
	Nitrates as N (dissolved)	Ammonia as N	Total Kjeldahl Nitrogen	Total phosphorous as P	Ortho-phosphate as P
	USBR	USBR	USBR	USBR	USBR
	mg/L	mg/L	mg/L	mg/L	mg/L
Jan-09-2014	0.2	0.2	<5.0	0.12 V	0.046 T
Feb-27-2014	1.0 T	0.2 L	1.5	0.33 T	0.026
Mar-26-2014	0.02	0.2	2.5	0.62 T, U	0.220
Apr-25-2014					
May-08-2014	0.31	0.3	2.5	0.28 T	<0.010
Jun-26-2014	4.80 U	0.8 U	3.5 U	0.18	<0.050
Jul-31-2014	<0.02	0.2V	3.5 L, U	0.13	<0.010
Aug-31-2014					
Sep-04-2015	<0.02	0.1	2.6	0.20 T	<0.010 T

Notes:

Results of the Interim Monitoring Program Oct 2013 - Feb 2014

	General Minerals						
	Calcium	Magnesium	Potassium	Sodium	Chloride (dissolved)	Sulfate (dissolved)	Total Organic Carbon
	USBR	USBR	USBR	USBR	USBR	USBR	USBR
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Jan-09-2014	120	76	6.5	400	470	650	NA
Feb-27-2014	110	75	6.0	480	480	670	11.0

Notes:

	Total Metals						
	Arsenic	Cadmium	Copper	Lead	Mercury	Nickel	Zinc
	USBR	USBR	USBR	USBR	USBR	USBR	USBR
	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Jan-09-2014	5.3	<1.0	29 L	<2.5	110	10.0	<5.0
Feb-27-2014	<5.0	<1.0	<50	<2.5	<100	16.0	<10

Notes:

Table 4. Water quality monitoring in Mud Slough (north) above the San Luis Drain (Station C)

	Physicals						
PARAMETER	Dissolved Oxygen	Specific Conductance	Turbidity	pH	Boron	Total Selenium	Molybdenum
DATA SOURCE	WSJRW	WSJRW	WSJRW	USBR	WSJRW	WSJRW	USBR
UNITS	mg/L	µS/cm	NTU	units	mg/L	µg/L	µg/L
Jul-02-2014							
Jul-11-2014							
Jul-18-2014							
Jul-25-2014							
Jul-31-2014							
Aug-07-2014							
Aug-15-2014							
Aug-22-2014							
Sep-04-2014							
Sep-19-2014							
Sep-26-2014							

**Notes:**

- > Samples only collected when flow is sufficient.
- > No samples collected in July, August, or September due to lack of sufficient flow

Table 5. Water quality monitoring in Mud Slough (north) backwater below San Luis Drain discharge (Station I2)

PARAMETER	Physicals					Total Selenium
	Dissolved Oxygen	pH	Specific Conductance	Temperature	Turbidity	
DATA SOURCE	USBR	USBR	USBR	USBR	USBR	USBR
UNITS	mg/L	units	µS/cm	°C	NTU	µg/L
Jul-02-2014						
Jul-11-2014						
Jul-18-2014						
Jul-25-2014						
Jul-31-2014						
Aug-07-2014						
Aug-15-2014						
Aug-22-2014						
Sep-04-2014						
Sep-19-2014						
Sep-26-2014						

**Notes:**

Samples collected only when site is flooded

Site was dry from July through September (no sample collected)

**Table 6a. Water monitoring in Salt Slough at Highway 165  
Station F**

PARAMETER	Flow	Temperature	Specific Conductance
DATA SOURCE	USGS	USGS	USGS
UNITS	cfs	°C	µS/cm
Sep-01-2014	46	25.6	778
Sep-02-2014	45	26.0	736
Sep-03-2014	36	25.0	709
Sep-04-2014	30	24.7	823
Sep-05-2014	24	25.1	926
Sep-06-2014	23	25.3	1,070
Sep-07-2014	23	25.1	1,130
Sep-08-2014	24	24.6	1,210
Sep-09-2014	26	23.7	1,200
Sep-10-2014	26	23.7	1,100
Sep-11-2014	30	24.4	1,150
Sep-12-2014	24	24.7	1,050
Sep-13-2014	25	25.0	1,160
Sep-14-2014	26	25.6	1,110
Sep-15-2014	28	25.8	1,070
Sep-16-2014	31	24.5	1,080
Sep-17-2014	22	24.4	1,080
Sep-18-2014	20	23.8	1,130
Sep-19-2014	22	24.2	1,220
Sep-20-2014	23	24.7	1,150
Sep-21-2014	24	24.3	1,160
Sep-22-2014	29	23.9	1,110
Sep-23-2014	36	23.9	1,160
Sep-24-2014	31	24.2	1,160
Sep-25-2014	25	21.5	1,140
Sep-26-2014	24	20.1	1,190
Sep-27-2014	26	20.0	1,290
Sep-28-2014	25	20.7	1,340
Sep-29-2014	23	20.6	1,250
Sep-30-2014	21	21.7	1,290

**Notes:**

See Table 19 for explanation of footnotes and agency abbreviations.  
Preliminary Data

**Table 6b. Monthly Averages**

PARAMETER	Flow	Temperature	Specific Conductance
DATA SOURCE	Calculated	USGS	USGS
UNITS	acre-feet	°C	µS/cm
January	4,820	17	1,760
February	3,800	14	1,960
March	4,600	17	2,170
April	5,480	20	1,820
May	2,810	23	1,640
June	1,900	25	1,360
July	1,790	27	1,050
August	1,880	26	923
September	1,620	24	1,100
October			
November			
December			

Table 6c. Water quality monitoring in Salt Slough at Highway 165 (Station F)

PARAMETER	Physicals					Total Selenium	Total Boron	Total Molybdenum
	Dissolved Oxygen	pH	Specific Conductance	Temperature	Turbidity			
	DATA SOURCE	DATA SOURCE	DATA SOURCE	DATA SOURCE	DATA SOURCE			
UNITS	mg/L	units	µS/cm	°C	NTU	ug/L	mg/L	ug/L
Jul-02-2014		7.4	1,500	25.4	78.9	< 0.4	0.3	
Jul-11-2014	7.2	8.1	1,080	27.1	74.2	< 0.4	0.4	
Jul-18-2014	9.0	7.6	1,110	23.6	68.0	< 0.4	0.4	
Jul-25-2014	7.6	7.6	1,060	25.6	74.6	0.4	0.5	
Jul-31-2014	7.3	8.3	1,070	29.0		< 0.4	0.4	7
Aug-07-2014	8.2	7.6	941	25.9	78.2	< 0.4	0.4	
Aug-15-2014	10.4	8.7	976	25.0	61.0	< 0.4	0.4	
Aug-22-2014	10.3	7.6	868	25.5		< 0.4	0.3	
Sep-04-2014	9.8	7.4	858	24.2	71.0	< 0.4	0.4	5
Sep-19-2014	11.5	7.8	1,210	24.0	40.4	< 0.4	0.6	
Sep-26-2014	13.5	8.1	1,410	22.1	22.2	< 0.4	0.8	

Notes:

	Nutrients				
	Nitrates as N (dissolved)	Ammonia as N	Total Kjeldahl Nitrogen	Total phosphorous	Ortho-phosphate as P
	DATA SOURCE	DATA SOURCE	DATA SOURCE	DATA SOURCE	DATA SOURCE
UNITS	mg/L	mg/L	mg/L	mg/L	mg/L
Jan-09-2014	<10	0.3	0.8	0.095 L,V	0.05 T
Feb-27-2014	1.3 T	0.3 L	1.0	0.320 T	<0.01
Mar-26-2014	0.8	0.1	1.0	0.290 T	0.06
Apr-25-2014					
May-08-2014	0.5	0.1	0.7	0.21 T	0.07
Jun-26-2014	0.5	< 0.5	0.5	0.26	0.09
Jul-31-2014	0.5	0.1 V	1.3	0.22	0.06
Aug-01-2014					
Sep-04-2015	0.1	0.1	0.9	0.28 T	0.05 T

Notes:

Results of the Interim Monitoring Program Oct 2013 - Feb 2014

	General Minerals						
	Calcium	Magnesium	Potassium	Sodium	Chloride (dissolved)	Sulfate (dissolved)	Total Organic Carbon
	DATA SOURCE	DATA SOURCE	DATA SOURCE	DATA SOURCE	DATA SOURCE	DATA SOURCE	DATA SOURCE
UNITS	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Jan-09-2014	68	40	4.2	220	290	230	NA
Feb-27-2014	85	53	4.6	310	360	280	5.4

Notes:

	Total Metals							
	Arsenic	Cadmium	Copper	Lead	Mercury	Molybdenum	Nickel	Zinc
	DATA SOURCE	DATA SOURCE	DATA SOURCE	DATA SOURCE	DATA SOURCE	DATA SOURCE	DATA SOURCE	DATA SOURCE
UNITS	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Jan-09-2014	<5.0	<1.0	18	<2.5	110	9.4	<10	5.3
Feb-27-2014	<5.0	<1.0	<50	<2.5	<100	12.0	11	<10

Notes:

**Table 7a. Water quality monitoring in Grasslands Wetlands Water Supply Channels  
Station J Camp 13 Ditch headworks**

PARAMETER	Flow	Specific Conductance	Temperature	Total Selenium
DATA SOURCE	GWD	USBR	GWD	USBR
UNITS	cfs	µS/cm	°C	µg/L
Jul-02-2014	<20			
Jul-11-2014	<20			
Jul-18-2014	<20			
Jul-25-2014	<20			
Jul-31-2014	<20			
Aug-04-2014	<20			
Aug-11-2014	<20			
Aug-18-2014	<20			
Aug-25-2014	<20			
Sep-01-2014	<20			
Sep-08-2014	<20			
Sep-15-2014	<20			
Sep-22-2014	80	457	23.5	<0.4
Sep-29-2014	122	688	21.8	0.6

**Notes:**

Samples only collected when flow is passing site. Flow of less than 20 cfs does not reach Site C.  
July and August: Flow <20 cfs (no sample collected)

**Table 7b. Water quality monitoring in Grasslands Wetlands Water Supply Channels  
Station K2 Agatha Canal headworks**

PARAMETER	Flow	Specific Conductance	Temperature	Total Selenium
DATA SOURCE	GWD	USBR	GWD	USBR
UNITS	cfs	µS/cm	°C	µg/L
Jul-02-2014	<20			
Jul-11-2014	<20			
Jul-18-2014	<20			
Jul-25-2014	<20			
Jul-31-2014	<20			
Aug-04-2014	<20			
Aug-11-2014	<20			
Aug-18-2014	<20			
Aug-25-2014	<20			
Sep-01-2014	<20			
Sep-08-2014	<20			
Sep-15-2014	<20			
Sep-22-2014	80	465	23.5	<0.4
Sep-29-2014	122	696	21.8	0.6

**Notes:**

Samples only collected when flow is passing site. Flow of less than 20 cfs does not reach Site C.  
July and August: Flow <20 cfs (no sample collected)

**Table 8a. Water monitoring in the San Joaquin River above Merced River Station H2**

PARAMETER	Flow	Temperature	Specific Conductance
DATA SOURCE	USGS	USGS	USGS
UNITS	cfs	°C	µS/cm
Sep-01-2014	30	25.8	1,540
Sep-02-2014	30	26.4	1,370
Sep-03-2014	31	25.3	1,180
Sep-04-2014	31	25.2	1,290
Sep-05-2014	29	25.2	1,430
Sep-06-2014	27	25.2	1,670
Sep-07-2014	25	24.7	1,870
Sep-08-2014	25	24.5	1,960
Sep-09-2014	24	23.2	2,040
Sep-10-2014	25	24.2	2,000
Sep-11-2014	26	24.5	1,940
Sep-12-2014	26	25.0	1,950
Sep-13-2014	25	25.3	1,930
Sep-14-2014	26	25.7	1,850
Sep-15-2014	28	25.6	1,760
Sep-16-2014	26	24.4	1,760
Sep-17-2014	25	24.9	1,750
Sep-18-2014	24	24.6	1,940
Sep-19-2014	26	24.4	2,150
Sep-20-2014	26	24.5	2,070
Sep-21-2014	25	24.2	2,100
Sep-22-2014	27	23.8	1,950
Sep-23-2014	27	24.1	1,860
Sep-24-2014	29	24.4	1,640
Sep-25-2014	28	22.0	1,430
Sep-26-2014	26	20.4	1,640
Sep-27-2014	24	20.5	1,870
Sep-28-2014	25	21.1	2,120
Sep-29-2014	27	21.3	1,920
Sep-30-2014	23	21.7	1,930

**Notes:**

See Table 19 for explanation of footnotes and agency abbreviations.  
Preliminary Data

**Table 8b. Monthly Averages**

PARAMETER	Flow	Temperature	Specific Conductance
DATA SOURCE	Calculated	USGS	USGS
UNITS	acre-feet	°C	µS/cm
January	11,780	13	2,600
February	12,100	14	2,580
March	13,040	17	2,680
April	10,030	20	2,590
May	4,100	23	3,170
June	2,250	25	3,200
July	1,570	27	2,390
August	1,530	26	1,940
September	1,580	24	1,800
October			
November			
December			

Table 9. Water quality monitoring in the San Joaquin River above Merced River at China Island Refuge Station R

PARAMETER	Physicals					Total Selenium	Total Boron	Total Molybdenum
	Dissolved Oxygen	pH	Specific Conductance	Temperature	Turbidity			
	DATA SOURCE	DATA SOURCE	DATA SOURCE	DATA SOURCE	DATA SOURCE			
UNITS	mg/L	units	µS/cm	°C	NTU	ug/L	mg/L	ug/L
Jul-02-2014		8.6	2,090	28.2	40.1	1.5	1.2	
Jul-18-2014	8.4	8.3	2,830	26.3	18.1	0.6	1.8	
Jul-25-2014	8.2	8.3	2,830	26.6	26.3	0.8	3.1	
Aug-07-2014								
Aug-15-2014	10.3	8.4	2,400	26.7	17.2	0.5	1.2	
Aug-22-2014	8.2	8.3	1,380	27.4	NA	< 0.4	0.6	
Sep-04-2014	9.5	8.2	1,280	25.8	25.3	< 0.4	0.5	7
Sep-19-2014								
Sep-26-2014								

Notes:

	Nutrients				
	Nitrates as N (Dissolved)	Total ammonia	Total Kjeldahl Nitrogen	Total phosphorous	Ortho-phosphate as P
	DATA SOURCE	DATA SOURCE	DATA SOURCE	DATA SOURCE	DATA SOURCE
UNITS	mg/L	mg/L	mg/L	mg/L	mg/L
Jan-09-2014	0.16	0.098	0.85	0.16V	0.054 T
Feb-27-2014					
Mar-26-2014	0.05	0.110	2.00	0.53 T	0.150
Apr-25-2014					
May-08-2014	<0.01	0.051	1.00	0.20 T	<0.010
Jun-26-2014	<1.00	<0.50	1.60	0.30	<0.050
Aug-01-2014					
Sep-04-2015	<0.01	0.08	0.78	0.17 T	0.052 T

Notes: No nutrients, general minerals or total minerals collected at Site R in February due to unsafe site conditions

Results of the Interim Monitoring Program Oct 2013 - Feb 2014

	General Minerals							
	Calcium	Magnesium	Potassium	Sodium	Chloride (Dissolved)	Sulfate (Dissolved)	Total Organic Carbon	Total Dissolved Solids
	DATA SOURCE	DATA SOURCE	DATA SOURCE	DATA SOURCE	DATA SOURCE	DATA SOURCE	DATA SOURCE	DATA SOURCE
UNITS	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	Units	mg/L
Jan-09-2014	91	59	5.1	310	430	430	NA	NA
Feb-27-2014								

Notes: No nutrients, general minerals or total minerals collected at Site R in February due to unsafe site conditions

	Total Metals								
	Arsenic	Boron	Cadmium	Copper	Lead	Mercury	Molybdenum	Nickel	Zinc
	DATA SOURCE	DATA SOURCE	DATA SOURCE	DATA SOURCE	DATA SOURCE	DATA SOURCE	DATA SOURCE	DATA SOURCE	DATA SOURCE
UNITS	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Jan-09-2014	<5.0	1,800	<1.0	23	<2.5	<100	12	<10	<5.0
Feb-27-2014									

Notes: No nutrients, general minerals or total minerals collected at Site R in February due to unsafe site conditions



Table 10a. Water monitoring in the San Joaquin River at Fremont Ford (Station G)

PARAMETER	Flow	Temperature	Specific Conductance
DATA SOURCE	USGS	USGS	USGS
UNITS	cfs	°C	µS/cm
Sep-01-2014	38	25.6	1,220
Sep-02-2014	41	26.0	1,020
Sep-03-2014	42	25.0	1,030
Sep-04-2014	37	24.8	1,230
Sep-05-2014	33	25.1	1,530
Sep-06-2014	30	25.2	1,740
Sep-07-2014	30	24.7	1,840
Sep-08-2014	28	24.5	1,970
Sep-09-2014	29	23.4	1,910
Sep-10-2014	30	23.8	1,790
Sep-11-2014	29	24.3	1,800
Sep-12-2014	31	24.7	1,610
Sep-13-2014	29	24.7	1,660
Sep-14-2014	33	25.2	1,590
Sep-15-2014	33	25.4	1,530
Sep-16-2014	32	24.2	1,480
Sep-17-2014	29	24.3	1,590
Sep-18-2014	26	24.3	2,030
Sep-19-2014	28	24.1	1,970
Sep-20-2014	28	24.3	2,020
Sep-21-2014	28	24.2	1,910
Sep-22-2014	28	23.8	1,830
Sep-23-2014	31	24.0	1,570
Sep-24-2014	34	24.2	1,300
Sep-25-2014	28	22.0	1,500
Sep-26-2014	25	20.4	1,760
Sep-27-2014	24	20.5	2,100
Sep-28-2014	28	20.9	1,840
Sep-29-2014	26	21.1	1,800
Sep-30-2014	23	21.5	1,940

**Notes:**

See Table 19 for explanation of footnotes and agency abbreviations.  
Preliminary Data

Table 10b. Monthly Averages

PARAMETER	Flow	Temperature	Specific Conductance
DATA SOURCE	Calculated	USGS	USGS
UNITS	acre-feet	°C	µS/cm
January	6,310	10	1,990
February	6,040	14	2,150
March	6,900	17	2,270
April	6,670	20	2,230
May	2,770	23	2,310
June		25	2,040
July		27	1,580
August	2,020	26	1,220
September	1,810	24	1,670
October			
November			
December			

Table 11a. Water monitoring in the San Joaquin River at Crows Landing (Station N)

PARAMETER	Flow	Temperature	Specific Conductance	Total Selenium
DATA SOURCE	USGS	USGS	USGS	USBR
UNITS	cfs	°C	µS/cm	µg/L
Sep-01-2014	87	25.3	1,290	< 0.4
Sep-02-2014	67	25.4	1,320	< 0.4
Sep-03-2014	77	24.0	1,360	< 0.4
Sep-04-2014	94	23.8	1,320	< 0.4
Sep-05-2014	84	24.3	1,270	0.4
Sep-06-2014	95	24.4	1,260	0.5
Sep-07-2014	91	24.0	1,260	0.5
Sep-08-2014	83	23.9	1,220	0.5
Sep-09-2014	81	22.7	1,200	0.5
Sep-10-2014	95	23.3	1,150	0.4
Sep-11-2014	79	23.9	1,180	< 0.4
Sep-12-2014	78	24.2	1,280	0.4
Sep-13-2014	103	24.5	1,210	< 0.4
Sep-14-2014	86	25.2	1,290	< 0.4
Sep-15-2014	77	25.2	1,420	< 0.4
Sep-16-2014	79	24.1	1,430	0.4
Sep-17-2014	75	24.6	1,440	0.4
Sep-18-2014	80	24.8	1,530	0.4
Sep-19-2014	96	23.9	1,460	0.6
Sep-20-2014	105	24.1	1,410	0.4
Sep-21-2014	112	23.8	1,390	< 0.4
Sep-22-2014	104	23.6	1,430	< 0.4
Sep-23-2014	98	23.8	1,440	0.4
Sep-24-2014	109	24.1	1,410	0.4
Sep-25-2014	115	22.7	1,370	0.4
Sep-26-2014	118	21.0	1,320	0.4
Sep-27-2014	114	20.7	1,250	< 0.4
Sep-28-2014	116	21.3	1,230	0.4
Sep-29-2014	108	21.2	1,240	0.4
Sep-30-2014	98	21.9	1,340	< 0.4

**Notes:**

Preliminary Data

**11b. Monthly Averages**

PARAMETER	Flow	Temperature	Specific Conductance	Selenium
DATA SOURCE	Calculated	Calculated	Calculated	Calculated
UNITS	acre-feet	°C	µS/cm	µg/L
January	22,200	10	1,620	0.7
February	22,450	13	1,760	1.3
March	22,480	17	2,180	1.1
April	11,060	20	1,710	0.5
May	21,700	17	2,110	1.1
June	6,040	25	1,880	0.8
July	4,200	27	1,700	0.8
August	4,080	25	1,500	0.6
September	5,560	24	1,320	0.5
October				
November				
December				

Table 11c. Water quality monitoring in the San Joaquin River at Crows Landing (Station N)

PARAMETER	Physicals					Selenium	Boron	Molybdenum
	Dissolved Oxygen	pH	Specific Conductance	Temperature	Turbidity			
	DATA SOURCE	DATA SOURCE	DATA SOURCE	DATA SOURCE	DATA SOURCE			
	USBR	USBR	USBR	USBR	USBR	USBR	USBR	USBR
	mg/L	units	µS/cm	°C	NTU	µg/L	mg/L	mg/L
Jun-06-2014	18.0	8.0	1,780	26.6	22.9	0.6	0.8	
Jun-13-2014	9.3	8.6	1,570	24.2		0.4	0.6	
Jun-20-2014	13.4	8.1	2,020	23.4	20.7	0.5	1.1	
Jun-26-2014	18.0	8.4	2,120	24.2	22.9	1.3	1.5	7.9
Jul-11-2014	7.7	8.1	1,730	27.0	35.8	0.7	1.0	
Jul-18-2014	8.2	8.2	1,620	26.1	80.3	0.6	0.8	
Jul-25-2014	8.4	8.0	1,560	26.9	27.2	0.5	0.8	
Jul-31-2014	7.7	8.3	1,850	28.8		0.8	1.0	6.2
Aug-07-2014	7.1	7.7	1,700	25.8	21.7	0.6	0.9	
Sep-04-2014	9.4	7.8	1,310	24.4	15.4	< 0.4	0.5	5.6
Sep-19-2014	10.1	7.9	1,870	27.1	9.7	< 0.4	0.5	
Sep-26-2014	11.4	7.8	1,090	23.0	10.5	< 0.4	0.4	

Notes:

**Table 12. Summary of fathead minnow (*Pimephales promelas*) larvae survival in 7-day tests using water samples collected from March 2014 to March 2016. Each value is the mean of 4 replicates with 10 fish in each replicate.**

See Table 19 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	%	%	%	%	%	%
Mar-2014	90	93	98	93	73 <sup>a</sup>	95
Jun-2014	95	98	88	98	95	95
Sep-2014	5*	95	98	88*	100	93
Nov-2014						
Mar-2015						
Jun-2015						
Sep-2015						
Mar-2016						

**Table 13. Summary of fathead minnow (*Pimephales promelas*) larvae growth in 7-day tests using water samples collected from March 2014 to March 2016. Each value is the mean of 4 replicates with 10 fish in each replicate.**

See Table 19 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
Mar-2014	0.84	0.70	0.78	0.68	0.74	0.74
Jun-2014	0.67	0.62	0.75	0.83	0.62	0.67
Sep-2014	0.01*	0.65	0.58	0.63	0.61	0.58
Nov-2014						
Mar-2015						
Jun-2015						
Sep-2015						
Mar-2016						

**Table 14. Summary of *Daphnia magna* survival in 7-day tests using water samples collected from March 2014 to March 2016. Each value is the mean of 10 replicates with 1 animal in each replicate.**

See Table 19 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	%	%	%	%	%	%
Mar-2014	100	90	100	100	100	100
Jun-2014	100	100	90	20*	90	80
Sep-2014	0*	100	100	100	100	100
Nov-2014						
Mar-2015						
Jun-2015						
Sep-2015						
Mar-2016						

**Notes:**

Notes: Toxicity data not available through February 2014. Data will be available starting March 2014. Please see tox explanation sheet following tables.

**Table 15. Summary of *Daphnia magna* reproduction in 7-day tests using water samples collected from March 2014 to March 2016. Each value is the mean of 10 replicates with 1 animal in each replicate.**

See Table 19 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
Mar-2014	67.4*	72.3	86.9	88.8	85.0	82.9
Jun-2014	72.4	88.1	53.1*	41.7*	68.8	61.3
Sep-2014	0*	17.9	16.6	23.2	21.3	16.1
Nov-2014						
Mar-2015						
Jun-2015						
Sep-2015						
Mar-2016						

**Table 16. Summary of *Selenastrum capricornutum* growth in 4-day tests using water samples collected from March 2014 to March 2016. Each value is the mean of 4 replicates.**

See Table 19 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
Mar-2014	4.2*	7.2	7.9	7.7 <sup>a</sup>	7.3	4.1
Jun-2014	2.2*		2.8*	5.4*	6.2	4.2
Sep-2014		5.5	4.8	6.0	4.9	2.8
Nov-2014						
Mar-2015						
Jun-2015						
Sep-2015						
Mar-2016						

**Notes:**

Toxicity data not available through February 2014. Data will be available starting March 2014. Please see tox explanation sheet following tables.

## **Evaluation of the Toxicity of Grasslands Bypass Project Ambient Water Samples for the samples that were collected in September 2014.**

### **Chronic Toxicity of Grasslands Bypass Project Ambient Water to *Selenastrum capricornutum***

There were significant reductions in algal growth in the Site B sample. However, it is important to note that there was also a significant reduction in algal growth in the conductivity control, which suggests that the elevated conductivity (ranging between 13,000-14,000  $\mu\text{S}/\text{cm}$ ) alone can cause a reduction in algal growth. There were no significant reductions in algal growth in any of the other Grasslands Bypass Project ambient water samples.

### **Chronic Toxicity of Grasslands Bypass Project Ambient Water to *Daphnia magna***

There was a significant reduction in *D. magna* survival and reproduction in the Site B sample. However, it is important to note that there were also significant reductions in survival and reproduction in the conductivity control, which suggests that the elevated conductivity (ranging between 13,000-14,000  $\mu\text{S}/\text{cm}$ ) alone can cause a reduction in *D. magna* survival and reproduction. There were no significant reductions in survival or reproduction in any of the other Grasslands Bypass Project ambient water samples.

### **Chronic Toxicity of Grasslands Bypass Project Ambient Water to Fathead Minnows**

There were significant reductions in fathead minnow survival in the Site B and F samples. There was a significant reduction in growth in the site B sample. There were no significant reductions in survival or growth in any of the other Grasslands Bypass Project ambient water samples.

**Table 17. Summary of selenium concentrations in grab water samples collected at study stations for use in laboratory toxicity tests**

See Table 19 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
17-Mar-14	18	< 0.8	1.3	0.5	< 0.4
19-Mar-14	18	< 0.8	1.5	0.5	< 0.4
21-Mar-14	18	< 0.8	1.7	0.4	< 0.4
9-Jun-14	16	< 0.8	7.2	< 0.4	< 0.4
11-Jun-14	15	< 0.8	3.3	< 0.4	< 0.4
13-Jun-14	15	< 0.8	11	< 0.4	< 0.4
15-Sep-14	8	< 0.4	< 0.8	< 0.4	< 0.4
17-Sep-14	8	< 0.4	< 0.8	< 0.4	< 0.4
19-Sep-14	10	< 0.4	< 0.8	< 0.4	< 0.4
Nov-2014					
Mar-2015					
Jun-2015					
Sep-2015					
Mar-2016					

**Table 18. Summary of total suspended solids concentrations in grab water samples collected at study stations for use in laboratory toxicity tests**

See Table 19 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
17-Mar-14	87 **	61	79	60	6.0
19-Mar-14	< 5.0 T,V **	69 T,V	62 T,V	62 T,V	5.8 T,V
21-Mar-14	46	64	59	58	6.0
9-Jun-14	50 T	58 T	31 T	24 T	<0.5 T
11-Jun-14	51 T	49	16 T	110	23.0
13-Jun-14	47	39	57	<0.5 T	<0.5 T
15-Sep-14	57 T	8.3 T	9.5 T	26 T	<0.5 T
17-Sep-14	95 T	<5.0 T	14 T	26 T	<0.5 T
19-Sep-14	36	7.0	6.0	34	<0.5
Nov-2014					
Mar-2015					
Jun-2015					
Sep-2015					
Mar-2016					

**Table 19. Explanations of footnotes and agency abbreviations.**

<b>Agency</b>	
CVRWQCB	California Regional Water Quality Control Board, Central Valley Region
GWD	Grasslands Water District
SLDMWA	San Luis & Delta-Mendota Water Authority
USBR	U.S. Bureau of Reclamation
USGS	U.S. Geological Survey
WSJRWC	Westside San Joaquin River Watershed Coalition (WSJRWC)
<b>Water Quality Monitoring</b>	
e	Estimated value
.	Not applicable
<	Less than MDL
D	Sample was dechlorinated
G	Data from records of the Grassland Water District.
H	Result may have high bias
J	Result is between the MDL and RL
L	Result may have low bias
MDL	Minimum detection level
	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
RL	Reporting level
T	Result obtained past the holding time
U	Result determined to be an outlier at the time of data validation
V	Result may vary excessively from the true value
UA3	Use Agreement for Continued Use of the San Luis Drain January 2010 - December 2019
<b>Toxicity</b>	
*	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.
†††	DMC water failed to meet the reproduction (>10 neonates/adult) acceptability criteria.
††††	DMC water failed to meet minimum growth ( $10^6$ 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 $0.4 \mu\text{g/L}$ as of June 1998.
v	Based on definitive bioassay, NOEC is 50 percent
a	The growth response for one of the replicates at this test treatment was determined