Mendota Pool Bypass and Reach 2B Improvements Project

Final
Environmental Impact Statement/Report

Part V – Appendices to the EIS/R

SAN JOAQUIN RIVER
RESTORATION PROGRAM

Final
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Mendota Pool Bypass and Reach 2B Improvements Project

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Appendix 4-A Air Quality Summary Tables

SAN JOAQUIN RIVER
RESTORATION PROGRAM

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Construction Offroad Emissions - Onsite Equipment

Schedule Name	Year	CO	NOX	ROG	SOX	PM	CO2
		tons					Metric tons
2	2014	10.01	27.86	2.21	0.02	1.05	2,340.88
2	2015	32.66	86.39	7.18	0.09	3.28	8,102.61
2	2016	33.26	93.00	7.99	0.10	3.60	9,088.61
2	2017	12.45	34.77	3.03	0.04	1.35	3,478.90
4	2014	11.30	31.13	2.50	0.03	1.17	2,670.14
4	2015	37.20	99.55	8.32	0.10	3.80	9,389.71
4	2016	30.34	85.68	7.42	0.09	3.33	8,487.36
4	2017	13.36	36.73	3.18	0.04	1.43	3,651.31
4	2018	4.36	12.75	1.12	0.01	0.50	1,298.30
7	2018	17.93	48.02	3.90	0.04	1.82	4,183.76
7	2019	18.14	49.41	4.18	0.05	1.86	4,938.91
7	2020	40.20	109.40	9.27	0.11	4.16	10,662.16
7	2021	35.91	98.07	8.39	0.10	3.74	9,719.92
7	2022	15.82	43.64	3.72	0.05	1.66	4,288.85
7	2023	11.45	32.16	2.79	0.03	1.24	3,234.45
8	2018	17.93	48.02	3.90	0.04	1.82	4,183.76
8	2019	18.10	49.32	4.17	0.05	1.85	4,930.36
8	2020	26.92	73.20	6.18	0.08	2.77	7,163.81
8	2021	18.70	50.42	4.31	0.05	1.92	5,025.10
8	2022	15.87	43.95	3.76	0.05	1.68	4,388.79
8	2023	9.89	27.82	2.42	0.03	1.08	2,790.45
9	2018	7.90	21.11	1.72	0.02	0.80	1,890.13
9	2019	28.82	78.08	6.54	0.08	2.96	7,476.20
9	2020	24.55	66.94	5.70	0.07	2.55	6,523.27
9	2021	33.53	92.02	7.82	0.09	3.50	8,990.41
9	2022	16.12	45.12	3.87	0.05	1.74	4,416.27

Alternative	Year	CO	NOX	ROG	SOX	PM	CO2
		tons					Metric tons
A	2014	10.01	27.86	2.21	0.02	1.05	2,340.88
A	2015	32.66	86.39	7.18	0.09	3.28	8,102.61
A	2016	33.26	93.00	7.99	0.10	3.60	9,088.61
A	2017	12.45	34.77	3.03	0.04	1.35	3,478.90
A	2018	17.93	48.02	3.90	0.04	1.82	4,183.76
A	2019	18.14	49.41	4.18	0.05	1.86	4,938.91
A	2020	40.20	109.40	9.27	0.11	4.16	10,662.16
A	2021	35.91	98.07	8.39	0.10	3.74	9,719.92
A	2022	15.82	43.64	3.72	0.05	1.66	4,288.85
A	2023	11.45	32.16	2.79	0.03	1.24	3,234.45
B	2014	11.30	31.13	2.50	0.03	1.17	2,670.14
B	2015	37.20	99.55	8.32	0.10	3.80	9,389.71
B	2016	30.34	85.68	7.42	0.09	3.33	8,487.36
B	2017	13.36	36.73	3.18	0.04	1.43	3,651.31
B	2018	22.29	60.77	5.02	0.06	2.32	5,482.06
B	2019	18.10	49.32	4.17	0.05	1.85	4,930.36
B	2020	26.92	73.20	6.18	0.08	2.77	7,163.81
B	2021	18.70	50.42	4.31	0.05	1.92	5,025.10
B	2022	15.87	43.95	3.76	0.05	1.68	4,388.79
B	2023	9.89	27.82	2.42	0.03	1.08	2,790.45
C	2014	10.01	27.86	2.21	0.02	1.05	2,340.88
C	2015	32.66	86.39	7.18	0.09	3.28	8,102.61
C	2016	33.26	93.00	7.99	0.10	3.60	9,088.61
C	2017	12.45	34.77	3.03	0.04	1.35	3,478.90
C	2018	7.90	21.11	1.72	0.02	0.80	1,890.13
C	2019	28.82	78.08	6.54	0.08	2.96	7,476.20
C	2020	24.55	66.94	5.70	0.07	2.55	6,523.27
C	2021	33.53	92.02	7.82	0.09	3.50	8,990.41
C	2022	16.12	45.12	3.87	0.05	1.74	4,416.27
D	2014	11.30	31.13	2.50	0.03	1.17	2,670.14
D	2015	37.20	99.55	8.32	0.10	3.80	9,389.71
D	2016	30.34	85.68	7.42	0.09	3.33	8,487.36
D	2017	13.36	36.73	3.18	0.04	1.43	3,651.31
D	2018	12.26	33.86	2.85	0.03	1.30	3,188.43
D	2019	28.82	78.08	6.54	0.08	2.96	7,476.20
D	2020	24.55	66.94	5.70	0.07	2.55	6,523.27
D	2021	33.53	92.02	7.82	0.09	3.50	8,990.41
D	2022	16.12	45.12	3.87	0.05	1.74	4,416.27
A	Total	227.83	622.71	52.66	0.63	23.76	60,039.05
B	Total	203.98	558.55	47.29	0.57	21.35	53,979.09
C	Total	199.29	545.29	46.07	0.55	20.83	52,307.27
D	Total	207.48	569.10	48.21	0.58	21.77	54,793.09

Notes:

1. Activity data was provided by DWR according to 5 report schedules with a specified combination of report schedules for a given alternative. The second report added for an alternative had a start date assumed of 9/1/2018.

2. On-site equipment includes all construction equipment specified on DWR report schedules except hauling trucks associated with potential off-site borrow material hauling activities.

3. Emission factors are based on OFFROAD 2011 as compiled in the Roadway Model. The emission factors are all from year 2014 regardless of the calendar year contained in the schedule to be conservative and flexible with scheduling of specific construction phases.

Construction Offroad Emissions - Borrow Material Hauling Trucks On-road

Schedule Name	Year	CO	NOX	ROG	SOX	PM	CO2
		tons					Metric tons
2	2014	1.31	3.86	0.34	0.004	0.15	393.94
2	2015	0.62	1.82	0.16	0.002	0.07	185.96
2	2016	0.70	2.06	0.18	0.002	0.08	210.18
2	2017	-	-	-	-	-	-
4	2014	1.31	3.86	0.34	0.004	0.15	393.94
4	2015	0.78	2.30	0.20	0.002	0.09	234.50
4	2016	0.42	1.22	0.11	0.001	0.05	124.89
4	2017	-	-	-	-	-	-
4	2018	-	-	-	-	-	-
7	2018	1.02	3.01	0.26	0.003	0.12	307.07
7	2019	0.40	1.16	0.10	0.001	0.04	118.74
7	2020	0.97	2.84	0.25	0.003	0.11	290.03
7	2021	0.20	0.59	0.05	0.001	0.02	59.79
7	2022	0.42	1.24	0.11	0.001	0.05	126.25
7	2023	0.08	0.22	0.02	0.0002	0.01	22.86
8	2018	1.02	3.01	0.26	0.003	0.12	307.07
8	2019	0.40	1.16	0.10	0.001	0.04	118.74
8	2020	0.22	0.66	0.06	0.001	0.03	67.36
8	2021	0.31	0.92	0.08	0.001	0.04	94.09
8	2022	0.31	0.90	0.08	0.001	0.03	91.96
8	2023	0.08	0.22	0.02	0.0002	0.01	22.86
9	2018	0.43	1.28	0.11	0.001	0.05	130.24
9	2019	0.56	1.63	0.14	0.002	0.06	166.83
9	2020	3.02	8.87	0.78	0.010	0.34	906.06
9	2021	1.69	4.95	0.44	0.005	0.19	505.98
9	2022	0.14	0.40	0.04	0.000	0.02	40.96

Alternative	Year	CO	NOX	ROG	SOX	PM	CO2
		tons					Metric tons
A	2014	1.31	3.86	0.34	0.00	0.15	393.94
A	2015	0.62	1.82	0.16	0.00	0.07	185.96
A	2016	0.70	2.06	0.18	0.00	0.08	210.18
A	2017	-	-	-	-	-	-
A	2018	1.02	3.01	0.26	0.00	0.12	307.07
A	2019	0.40	1.16	0.10	0.00	0.04	118.74
A	2020	0.97	2.84	0.25	0.00	0.11	290.03
A	2021	0.20	0.59	0.05	0.00	0.02	59.79
A	2022	0.42	1.24	0.11	0.00	0.05	126.25
A	2023	0.08	0.22	0.02	0.00	0.01	22.86
B	2014	1.31	3.86	0.34	0.00	0.15	393.94
B	2015	0.78	2.30	0.20	0.00	0.09	234.50
B	2016	0.42	1.22	0.11	0.00	0.05	124.89
B	2017	-	-	-	-	-	-
B	2018	1.02	3.01	0.26	0.00	0.12	307.07
B	2019	0.40	1.16	0.10	0.00	0.04	118.74
B	2020	0.22	0.66	0.06	0.00	0.03	67.36
B	2021	0.31	0.92	0.08	0.00	0.04	94.09
B	2022	0.31	0.90	0.08	0.00	0.03	91.96
B	2023	0.08	0.22	0.02	0.00	0.01	22.86
C	2014	1.31	3.86	0.34	0.00	0.15	393.94
C	2015	0.62	1.82	0.16	0.00	0.07	185.96
C	2016	0.70	2.06	0.18	0.00	0.08	210.18
C	2017	-	-	-	-	-	-
C	2018	0.43	1.28	0.11	0.00	0.05	130.24
C	2019	0.56	1.63	0.14	0.00	0.06	166.83
C	2020	3.02	8.87	0.78	0.01	0.34	906.06
C	2021	1.69	4.95	0.44	0.01	0.19	505.98
C	2022	0.14	0.40	0.04	0.00	0.02	40.96
D	2014	1.31	3.86	0.34	0.00	0.15	393.94
D	2015	0.78	2.30	0.20	0.00	0.09	234.50
D	2016	0.42	1.22	0.11	0.00	0.05	124.89
D	2017	-	-	-	-	-	-
D	2018	0.43	1.28	0.11	0.00	0.05	130.24
D	2019	0.56	1.63	0.14	0.00	0.06	166.83
D	2020	3.02	8.87	0.78	0.01	0.34	906.06
D	2021	1.69	4.95	0.44	0.01	0.19	505.98
D	2022	0.14	0.40	0.04	0.00	0.02	40.96
A	Total	5.72	16.79	1.48	0.02	0.64	1,714.81
B	Total	4.86	14.25	1.25	0.02	0.55	1,455.40
C	Total	8.48	24.88	2.19	0.03	0.95	2,540.15
D	Total	8.35	24.52	2.15	0.03	0.94	2,503.41

Notes:

1. Activity data was provided by DWR according to 5 report schedules with a specified combination of report schedules for a given alternative. The second report added for an alternative had a start date assumed of 9/1/2018.

2. Borrow material hauling trucks include only haul trucks associated with potential off-site borrow material hauling activities as specified on DWR report schedules. Borrow material hauling activity and emissions are assumed to occur on roadways between project areas.

3. Emission factors are based on OFFROAD 2011 as compiled in the Roadway Model. The emission factors are all from year 2014 regardless of the calendar year contained in the schedule to be conservative and flexible with scheduling of specific construction phases.

Construction Offroad Emission Factors

EquipID	Equipment Name	OFFROAD Equipment Name	AvgHP	LF	CO	CO2	NOX	PM	ROG	SOX
					g/hp-hr					
1	Pickup	Off-Highway Trucks	372	0.38	0.6099	201.4303	1.7895	0.0686	0.1573	0.0019
2	Flatrack Truck	Off-Highway Trucks	372	0.38	0.6099	201.4303	1.7895	0.0686	0.1573	0.0019
3	Air Compressor (Sullair 125)	Air Compressors	78	0.48	1.8614	272.7838	2.6861	0.2370	0.4312	0.0032
4	Loader JD 210C 4x4 (Cat 416)	Tractors/Loaders/Backhoes	83	0.37	0.9137	195.0935	2.0565	0.1616	0.2245	0.0019
5	Loader/Backhoe JD 710 (Cat 446)	Tractors/Loaders/Backhoes	83	0.37	0.9137	195.0935	2.0565	0.1616	0.2245	0.0019
6	Excavator Cat 330L	Excavators	218	0.38	0.9736	199.9869	1.6704	0.0530	0.1176	0.0019
7	Excavator Cat 345	Excavators	329	0.38	0.9697	199.1718	1.2804	0.0413	0.0930	0.0019
8	Loader Cat 950	Rubber Tired Loaders	206	0.36	0.8853	188.3234	1.9882	0.0676	0.1540	0.0018
9	Loader Cat 966	Rubber Tired Loaders	320	0.36	0.8824	187.6982	1.8793	0.0708	0.1595	0.0018
10	Loader Cat 980	Rubber Tired Loaders	320	0.36	0.8824	187.6982	1.8793	0.0708	0.1595	0.0018
11	Dozer Cat D6	Rubber Tired Dozers	211	0.40	0.9733	208.0791	3.1514	0.1551	0.2984	0.0020
12	Dozer Cat D8	Rubber Tired Dozers	354	0.40	0.9821	209.9459	3.1854	0.1485	0.2926	0.0020
13	Dozer Cat D10	Rubber Tired Dozers	584	0.40	0.9692	207.1907	2.8252	0.1018	0.2123	0.0020
14	Scraper Cat 613	Scrapers	225	0.48	1.1299	250.4320	4.2523	0.1944	0.3746	0.0024
15	Scraper Cat 623	Scrapers	381	0.48	1.1398	252.6332	3.0068	0.1213	0.2417	0.0024
16	Scraper Cat 631	Scrapers	381	0.48	1.1398	252.6332	3.0068	0.1213	0.2417	0.0024
17	Scraper Cat 657 Push-Pull	Scrapers	1923	0.48	1.1631	257.7962	3.5284	0.1323	0.2572	0.0025
18	Motor Grader Cat 140H	Graders	204	0.41	1.1213	216.0922	2.3459	0.0757	0.1667	0.0021
19	Motor Grader Cat 143H	Graders	204	0.41	1.1213	216.0922		0.0757	0.1667	0.0021
20	Motor Grader Cat 14H	Graders	204	0.41	1.1213	216.0922	2.3459	0.0757	0.1667	0.0021
21	Asphalt Paver	Pavers	158	0.42	1.2801	217.2863	2.3829	0.1192	0.2184	0.0021
22	Oil Distributor Truck	Off-Highway Trucks	372	0.38	0.6099	201.4303	1.7895	0.0686	0.1573	0.0019
23	Shuttle Buggy (Roadtec MTV)	Paving Equipment	339	0.36	1.1657	184.4846	1.6394	0.0584	0.1166	0.0018
24	Roller 1-3 Ton	Rollers	36	0.38	1.1807	218.6858	2.0235	0.1814	0.5137	0.0021
25	Roller 4-6 Ton	Rollers	36	0.38	1.1807	218.6858	2.0235	0.1814	0.5137	0.0021
26	Roller 7-9 Ton	Rollers	87	0.38	1.0638	197.0340	2.3977	0.1785	0.2729	0.0019
27	Roller 10+ Ton	Rollers	144	0.38	1.0593	196.2001	1.7724	0.0822	0.1445	0.0019
28	Rubber Tire Roller	Rollers	87	0.38	1.0638	197.0340	2.3977	0.1785	0.2729	0.0019
29	66" Single Drum Roller	Rollers	87	0.38	1.0638	197.0340	2.3977	0.1785	0.2729	0.0019
30	84" Single Drum Roller	Rollers	144	0.38	1.0593	196.2001	1.7724	0.0822	0.1445	0.0019
31	Compactor Cat 815	Other Construction Equipment	217	0.42	1.2029	218.8062	2.3973	0.0882	0.1763	0.0021
32	Compactor Cat 825	Other Construction Equipment	357	0.42	1.2042	219.0521	1.8946	0.0698	0.1433	0.0021
33	Power Kick Brooms	Sweepers/Scrubbers	36	0.46	1.5435	265.1539	2.6204	0.2746	0.8428	0.0025
34	Street Sweeper/Pickup Broom	Sweepers/Scrubbers	303	0.46	1.3870	238.2645	2.7437	0.1185	0.2180	0.0023
35	Water Truck (2,000 Gal)	Water Trucks	372	0.38	0.6099	201.4303	1.7895	0.0686	0.1573	0.0019
36	Water Truck (4,000 Gal)	Water Trucks	372	0.38	0.6099	201.4303	1.7895	0.0686	0.1573	0.0019
37	Double Bottom Dump Truck (25 TN)	Off-Highway Trucks	372	0.38	0.6099	201.4303	1.7895	0.0686	0.1573	0.0019
38	Transfer Truck (25 TN)	Off-Highway Trucks	372	0.38	0.6099	201.4303	1.7895	0.0686	0.1573	0.0019
39	Semi End Dump Truck (25 TN)	Off-Highway Trucks	372	0.38	0.6099	201.4303	1.7895	0.0686	0.1573	0.0019
40	Low Bed Truck	Off-Highway Trucks	372	0.38	0.6099	201.4303	1.7895	0.0686	0.1573	0.0019
41	Pump (Diesel 3" x 3")	Pumps	21	0.74	2.0479	420.5420	3.6948	0.2147	0.7055	0.0053
42	Fork Lift Cat TH560B Telescopic Handler	Rough Terrain Forklifts	96	0.40	1.1447	210.4867	1.7958	0.1049	0.1476	0.0020
43	Crane Grove RT990	Cranes	336	0.29	0.7523	150.6500	1.8047	0.0748	0.1456	0.0014
45	Sheet Pile Driver Power Bruce PQ-700V	Generator Sets	586	0.74	0.8525	420.5419	2.7473	0.0784	0.2129	0.0042
49	Hydraulic Pile Driver Power Bruce PQ-700V	Generator Sets	586	0.74	0.8525	420.5419	2.7473	0.0784	0.2129	0.0042
51	Excavator with Auger Attachment Cat 330L	Excavators	218	0.38	0.9736	199.9869	1.6704	0.0530	0.1176	0.0019
52	Excavator with Driver Attachment Cat 330L	Excavators	218	0.38	0.9736	199.9869	1.6704	0.0530	0.1176	0.0019
53	Skid Steer Loader Cat 277B	Skid Steer Loaders	71	0.37	1.2340	192.8723	1.4789	0.0864	0.1173	0.0018
54	Concrete Pump Mack Truck & 36-47M Pump	Other Construction Equipment	357	0.42	1.2042	219.0521	1.8946	0.0698	0.1433	0.0021

Notes:

1. Equipment was supplied by DWR for various construction schedule phases. This included the horsepower and load factor.
2. Emission factors are from OFFROAD 2011 for 2014

Construction Phase Mapping to Model Sources

Alternative	Schedule Name	Group	SRCID
A	2	GROUP 1	CNS
A	2	GROUP 2	CNS
A	2	GROUP 3	CHILLA
A	2	GROUP 4	SMCROSS
A	2	GROUP 5	LONE
A	2	GROUP 6	CNS
A	2	GROUP 7	CNS
A	2	GROUP 8	CNS
A	7	GROUP 1	CCANAL
A	7	GROUP 10	CNS
A	7	GROUP 11	CCANAL
A	7	GROUP 12	SCANAL
A	7	GROUP 13	CCANAL
A	7	GROUP 14	CCANAL
A	7	GROUP 15	SCANAL
A	7	GROUP 16	CNS
A	7	GROUP 2	CCANAL
A	7	GROUP 3	CCANAL
A	7	GROUP 4	CCANAL
A	7	GROUP 5	CHILLA
A	7	GROUP 6	CHILLA
A	7	GROUP 7	CNS
A	7	GROUP 8	CCANAL
A	7	GROUP 9	SCANAL
B	4	Group 1	CWB
B	4	Group 2	CWB
B	4	Group 3	CHILLA
B	4	Group 4	SMCROSS
B	4	Group 5	LONE
B	4	Group 6	CWB
B	4	Group 7	CWB
B	4	Group 8	CWB
B	8	GROUP 1	CCANAL
B	8	GROUP 10	CWB
B	8	GROUP 11	CCANAL
B	8	GROUP 12	CCANAL
B	8	GROUP 13	CCANAL
B	8	GROUP 14	CHILLA
B	8	GROUP 15	CCANAL
B	8	GROUP 16	CWB
B	8	GROUP 2	CCANAL
B	8	GROUP 3	CWB
B	8	GROUP 4	CCANAL
B	8	GROUP 5	CHILLA
B	8	GROUP 6	CCANAL
B	8	GROUP 7	CWB
B	8	GROUP 8	CCANAL
B	8	GROUP 9	CCANAL
C	2	GROUP 1	FNS
C	2	GROUP 2	FNS
C	2	GROUP 3	CHILLA

Construction Phase Mapping to Model Sources

Alternative	Schedule Name	Group	SRCID
C	2	GROUP 4	SMCROSS
C	2	GROUP 5	LONE
C	2	GROUP 6	FNS
C	2	GROUP 7	FNS
C	2	GROUP 8	FNS
C	9	GROUP 1	FNS
C	9	GROUP 10	FSDC
C	9	GROUP 11	FSDC
C	9	GROUP 12	FSDC
C	9	GROUP 13	FSDC
C	9	GROUP 14	FNS
C	9	GROUP 2	FNS
C	9	GROUP 3	FNS
C	9	GROUP 4	FSDC
C	9	GROUP 5	CHILLA
C	9	GROUP 6	FSDC
C	9	GROUP 7	FSDC
C	9	GROUP 8	FSDC
C	9	GROUP 9	FSDC
D	4	Group 1	FWN
D	4	Group 2	FWN
D	4	Group 3	CHILLA
D	4	Group 4	SMCROSS
D	4	Group 5	LONE
D	4	Group 6	FWN
D	4	Group 7	FWN
D	4	Group 8	FWN
D	9	GROUP 1	FWN
D	9	GROUP 10	NCANAL
D	9	GROUP 11	FSDC
D	9	GROUP 12	FSDC
D	9	GROUP 13	NCANAL
D	9	GROUP 14	FWN
D	9	GROUP 2	FWN
D	9	GROUP 3	FWN
D	9	GROUP 4	FSDC
D	9	GROUP 5	CHILLA
D	9	GROUP 6	FSDC
D	9	GROUP 7	NCANAL
D	9	GROUP 8	NCANAL
D	9	GROUP 9	FSDC

Notes:

1. The construction phase and Alternative was used to map the emissions from a given phase to a modeled work location.

Construction Onroad Vehicle Emissions

Alternative	Year	CO (Ton)	NOx (Ton)	VOC (Ton)	SOx (Ton)	PM10 (Ton)	PM2.5 (Ton)	CO2 (Metric Ton)	CH4 (Metric Ton)	CO2e (Metric Ton)
	2014	1.36	0.91	0.13	0.003	0.06	0.04	303.93	0.01	304
	2015	4.09	2.74	0.40	0.010	0.17	0.13	911.80	0.03	913
	2016	4.09	2.74	0.40	0.010	0.17	0.13	911.80	0.03	913
	2017	3.75	2.51	0.36	0.009	0.16	0.12	835.82	0.03	836
	2018	1.61	1.66	0.18	0.005	0.10	0.07	424.61	0.01	425
	2019	4.84	4.97	0.53	0.014	0.29	0.22	1,273.82	0.04	1,275
	2020	4.84	4.97	0.53	0.014	0.29	0.22	1,273.82	0.04	1,275
	2021	4.84	4.97	0.53	0.014	0.29	0.22	1,273.82	0.04	1,275
	2022	4.84	4.97	0.53	0.014	0.29	0.22	1,273.82	0.04	1,275
A	2023	4.44	4.55	0.49	0.013	0.26	0.21	1,167.67	0.04	1,168
	2014	1.32	0.79	0.12	0.003	0.05	0.04	283.70	0.01	284
	2015	3.95	2.36	0.37	0.009	0.16	0.11	851.09	0.03	852
	2016	3.95	2.36	0.37	0.009	0.16	0.11	851.09	0.03	852
	2017	3.95	2.36	0.37	0.009	0.16	0.11	851.09	0.03	852
	2018	3.25	2.62	0.33	0.009	0.16	0.12	775.75	0.03	776
	2019	4.81	4.90	0.53	0.014	0.28	0.22	1,263.38	0.04	1,264
	2020	4.81	4.90	0.53	0.014	0.28	0.22	1,263.38	0.04	1,264
	2021	4.81	4.90	0.53	0.014	0.28	0.22	1,263.38	0.04	1,264
	2022	4.81	4.90	0.53	0.014	0.28	0.22	1,263.38	0.04	1,264
B	2023	3.61	3.68	0.39	0.010	0.21	0.17	947.53	0.03	948
	2014	1.36	0.91	0.13	0.003	0.06	0.04	303.79	0.01	304
	2015	4.09	2.73	0.40	0.010	0.17	0.13	911.38	0.03	912
	2016	4.09	2.73	0.40	0.010	0.17	0.13	911.38	0.03	912
	2017	3.75	2.51	0.36	0.009	0.16	0.12	835.43	0.03	836
	2018	1.50	1.33	0.16	0.004	0.08	0.06	371.76	0.01	372
	2019	4.51	3.99	0.47	0.012	0.24	0.18	1,115.28	0.04	1,116
	2020	4.51	3.99	0.47	0.012	0.24	0.18	1,115.28	0.04	1,116
	2021	4.51	3.99	0.47	0.012	0.24	0.18	1,115.28	0.04	1,116
C	2022	4.51	3.99	0.47	0.012	0.24	0.18	1,115.28	0.04	1,116
	2014	1.32	0.79	0.12	0.003	0.05	0.04	283.59	0.01	284
	2015	3.95	2.36	0.37	0.009	0.15	0.11	850.78	0.03	851
	2016	3.95	2.36	0.37	0.009	0.15	0.11	850.78	0.03	851
	2017	3.95	2.36	0.37	0.009	0.15	0.11	850.78	0.03	851
	2018	3.15	2.31	0.31	0.008	0.14	0.11	725.94	0.03	726
	2019	4.51	3.98	0.47	0.012	0.24	0.18	1,114.33	0.04	1,115
	2020	4.51	3.98	0.47	0.012	0.24	0.18	1,114.33	0.04	1,115
	2021	4.51	3.98	0.47	0.012	0.24	0.18	1,114.33	0.04	1,115
D	2022	4.51	3.98	0.47	0.012	0.24	0.18	1,114.33	0.04	1,115

Notes:

1. Construction on-road vehicles include delivery trucks, concrete trucks, and worker commute vehicles.
2. The number of trip and trip lengths for workers and material hauling is shown in Construction Vehicle Trips and Trip Lengths table
3. Emission factors are from EMFAC2007 for calendar year 2014.

Construction Vehicle Trips and Trip Lengths

Alternative	Report	Off-Highway Trucks[1]	Delivery Trucks[2]		Concrete Trucks[3]		Worker Vehicles[4]				
		Off-Highway Truck VMT	Delivery Truck Trips	Delivery Truck VMT	Concrete Truck Trips	Concrete Truck VMT	Worker Trips Per Day	Days	Trip length Work	Total Worker Trips	Worker VMT
A	2	9,131,501	6,221	737,796	1,448	13,378	200	702	35	140,400	4,914,000
A	7	14,651,517	16,753	2,346,134	2,172	20,067	200	1134	35	226,800	7,938,000
B	4	10,439,027	6,086	717,426	1,218	11,249	200	810	35	162,000	5,670,000
B	8	11,399,576	15,814	2,242,033	1,828	16,874	200	1098	35	219,600	7,686,000
C	2	9,131,501	6,221	737,796	1,358	12,540	200	702	35	140,400	4,914,000
C	9	12,075,477	11,894	1,520,675	1,698	15,675	200	936	35	187,200	6,552,000
D	4	10,439,027	6,086	717,426	1,144	10,557	200	810	35	162,000	5,670,000
D	9	12,075,477	11,894	1,520,675	1,428	13,195	200	936	35	187,200	6,552,000

Notes:

1. Off-highway truck VMT represents the movement of all project trucks (haul trucks, concrete trucks, delivery trucks, etc.) on-site and between project areas and is calculated based on equipment schedule and usage provided by DWR and an assumed on-site travel speed of 25 mph.
2. Delivery truck trips and VMT by report is based on delivery truck trip data provided by DWR.
3. Concrete truck trips and VMT by report is based on information provided by DWR including the amount of concrete to be produced per year and the planned location of the concrete batch plant at the intersection of Highway 180 and West Belmont Ave.
4. The number of daily worker commute trips by report is based on information provided by DWR and is consistent with assumptions used in the traffic analysis. Worker trip length was assumed to be 35 miles which is the approximate distance from Madera or Fresno.

Construction Vehicle Emission Factors

Pollutant	Emission Type	Vehicle Class	Type	Speed	EF	Units
CH4	Running	HHDT	Exhaust	25	0.055	g/mile
CH4	Running	Worker	Exhaust	25	0.02475	g/mile
CH4	Running	HHDT	Exhaust	55	0.026	g/mile
CH4	Running	Worker	Exhaust	55	0.01675	g/mile
CH4	Starting	HHDT	Exhaust	25	0.143	g/trip
CH4	Starting	Worker	Exhaust	25	0.04225	g/trip
CH4	Starting	HHDT	Exhaust	55	0.143	g/trip
CH4	Starting	Worker	Exhaust	55	0.04225	g/trip
CO	Running	HHDT	Exhaust	25	4.584	g/mile
CO	Running	Worker	Exhaust	25	2.3855	g/mile
CO	Running	HHDT	Exhaust	55	2.862	g/mile
CO	Running	Worker	Exhaust	55	1.69725	g/mile
CO	Starting	HHDT	Exhaust	25	42.041	g/trip
CO	Starting	Worker	Exhaust	25	8.86475	g/trip
CO	Starting	HHDT	Exhaust	55	42.041	g/trip
CO	Starting	Worker	Exhaust	55	8.86475	g/trip
CO2	Running	HHDT	Exhaust	25	2026.279	g/mile
CO2	Running	Worker	Exhaust	25	432.63475	g/mile
CO2	Running	HHDT	Exhaust	55	1648.397	g/mile
CO2	Running	Worker	Exhaust	55	344.39225	g/mile
CO2	Starting	HHDT	Exhaust	25	57.439	g/trip
CO2	Starting	Worker	Exhaust	25	230.3475	g/trip
CO2	Starting	HHDT	Exhaust	55	57.439	g/trip
CO2	Starting	Worker	Exhaust	55	230.3475	g/trip
Nox	Running	HHDT	Exhaust	25	10.379	g/mile
Nox	Running	Worker	Exhaust	25	0.234	g/mile
Nox	Running	HHDT	Exhaust	55	9.211	g/mile
Nox	Running	Worker	Exhaust	55	0.2195	g/mile
NOx	Starting	HHDT	Exhaust	25	1.879	g/trip
NOx	Starting	Worker	Exhaust	25	0.3825	g/trip
NOx	Starting	HHDT	Exhaust	55	1.879	g/trip
NOx	Starting	Worker	Exhaust	55	0.3825	g/trip
PM10	Brake wear	HHDT	Fugitive	25	0.028	g/mile
PM10	Brake wear	Worker	Fugitive	25	0.013	g/mile
PM10	Brake wear	HHDT	Fugitive	55	0.028	g/mile
PM10	Brake wear	Worker	Fugitive	55	0.013	g/mile
PM10	Running	HHDT	Exhaust	25	0.395	g/mile
PM10	Running	Worker	Exhaust	25	0.02	g/mile
PM10	Running	HHDT	Exhaust	55	0.402	g/mile
PM10	Running	Worker	Exhaust	55	0.0115	g/mile
PM10	Starting	HHDT	Exhaust	25	0.004	g/trip
PM10	Starting	Worker	Exhaust	25	0.02275	g/trip
PM10	Starting	HHDT	Exhaust	55	0.004	g/trip
PM10	Starting	Worker	Exhaust	55	0.02275	g/trip
PM10	Tire wear	HHDT	Fugitive	25	0.036	g/mile
PM10	Tire wear	Worker	Fugitive	25	0.008	g/mile
PM10	Tire wear	HHDT	Fugitive	55	0.036	g/mile
PM10	Tire wear	Worker	Fugitive	55	0.008	g/mile
PM2.5	Brake wear	HHDT	Fugitive	25	0.012	g/mile
PM2.5	Brake wear	Worker	Fugitive	25	0.005	g/mile
PM2.5	Brake wear	HHDT	Fugitive	55	0.012	g/mile

Construction Vehicle Emission Factors

Pollutant	Emission Type	Vehicle Class	Type	Speed	EF	Units
PM2.5	Brake wear	Worker	Fugitive	55	0.005	g/mile
PM2.5	Running	HHDT	Exhaust	25	0.363	g/mile
PM2.5	Running	Worker	Exhaust	25	0.01825	g/mile
PM2.5	Running	HHDT	Exhaust	55	0.37	g/mile
PM2.5	Running	Worker	Exhaust	55	0.01075	g/mile
PM2.5	Starting	HHDT	Exhaust	25	0.003	g/trip
PM2.5	Starting	Worker	Exhaust	25	0.0205	g/trip
PM2.5	Starting	HHDT	Exhaust	55	0.003	g/trip
PM2.5	Starting	Worker	Exhaust	55	0.0205	g/trip
PM2.5	Tire wear	HHDT	Fugitive	25	0.009	g/mile
PM2.5	Tire wear	Worker	Fugitive	25	0.002	g/mile
PM2.5	Tire wear	HHDT	Fugitive	55	0.009	g/mile
PM2.5	Tire wear	Worker	Fugitive	55	0.002	g/mile
ROG	Diurnal	HHDT	Evaporative	25	0	g/start
ROG	Diurnal	Worker	Evaporative	25	0.708	g/start
ROG	Diurnal	HHDT	Evaporative	55	0	g/start
ROG	Diurnal	Worker	Evaporative	55	0.708	g/start
ROG	Hot Soak	HHDT	Evaporative	25	0.017	g/trip
ROG	Hot Soak	Worker	Evaporative	25	0.2275	g/trip
ROG	Hot Soak	HHDT	Evaporative	55	0.017	g/trip
ROG	Hot Soak	Worker	Evaporative	55	0.2275	g/trip
ROG	Resting	HHDT	Evaporative	25	0	g/start
ROG	Resting	Worker	Evaporative	25	0.345	g/start
ROG	Resting	HHDT	Evaporative	55	0	g/start
ROG	Resting	Worker	Evaporative	55	0.345	g/start
ROG	Running	HHDT	Exhaust	25	0.947	g/mile
ROG	Running	HHDT	Evaporative	25	0.0024	g/mile
ROG	Running	Worker	Evaporative	25	0.1026	g/mile
ROG	Running	Worker	Exhaust	25	0.07425	g/mile
ROG	Running	HHDT	Exhaust	55	0.543	g/mile
ROG	Running	HHDT	Evaporative	55	0.00109091	g/mile
ROG	Running	Worker	Evaporative	55	0.04663636	g/mile
ROG	Running	Worker	Exhaust	55	0.046	g/mile
ROG	Starting	HHDT	Exhaust	25	2.43	g/trip
ROG	Starting	Worker	Exhaust	25	0.74325	g/trip
ROG	Starting	HHDT	Exhaust	55	2.43	g/trip
ROG	Starting	Worker	Exhaust	55	0.74325	g/trip
SOx	Running	HHDT	Exhaust	25	0.019	g/mile
SOx	Running	Worker	Exhaust	25	0.0045	g/mile
SOx	Running	HHDT	Exhaust	55	0.016	g/mile
SOx	Running	Worker	Exhaust	55	0.0035	g/mile
SOX	Starting	HHDT	Exhaust	25	0.001	g/trip
SOX	Starting	Worker	Exhaust	25	0.0025	g/trip
SOX	Starting	HHDT	Exhaust	55	0.001	g/trip
SOX	Starting	Worker	Exhaust	55	0.0025	g/trip

Notes:

1. Emission Factors are based on EMFAC 2007.

Emissions from Grading and Bulldozing[1]

Schedule Name	Year	PM10 (ton)	PM2.5 (ton)
2	2014	0.92	0.30
2	2015	2.29	0.68
2	2016	1.27	0.44
2	2017	0.22	0.02
4	2014	1.04	0.34
4	2015	2.33	0.69
4	2016	0.90	0.33
4	2017	0.31	0.03
7	2018	2.75	1.14
7	2019	1.05	0.49
7	2020	3.03	1.35
7	2021	1.94	0.89
7	2022	0.67	0.28
7	2023	0.14	0.04
8	2018	2.75	1.14
8	2019	1.05	0.49
8	2020	1.09	0.36
8	2021	0.95	0.47
8	2022	0.28	0.08
8	2023	0.12	0.03
9	2018	0.71	0.23
9	2019	2.26	0.93
9	2020	2.60	1.30
9	2021	1.97	0.83
9	2022	0.55	0.20
Alternative	**Year**	**PM10**	**PM2.5**
	2014	0.92	0.30
	2015	2.29	0.68
	2016	1.27	0.44
	2017	0.22	0.02
	2018	2.75	1.14
	2019	1.05	0.49
	2020	3.03	1.35
	2021	1.94	0.89
	2022	0.67	0.28
A	2023	0.14	0.04
	2014	1.04	0.34
	2015	2.33	0.69
	2016	0.90	0.33
	2017	0.31	0.03
	2018	2.75	1.14
	2019	1.05	0.49
	2020	1.09	0.36
	2021	0.95	0.47
	2022	0.28	0.08
B	2023	0.12	0.03
	2014	0.92	0.30
	2015	2.29	0.68
	2016	1.27	0.44
	2017	0.22	0.02
	2018	0.71	0.23
	2019	2.26	0.93
	2020	2.60	1.30
	2021	1.97	0.83
C	2022	0.55	0.20
	2014	1.04	0.34
	2015	2.33	0.69
	2016	0.90	0.33
	2017	0.31	0.03
	2018	0.71	0.23
	2019	2.26	0.93
	2020	2.60	1.30
	2021	1.97	0.83
D	2022	0.55	0.20

Notes:
1. Emissions were caclulated following the AP-42 Chapter 11.9 assuming overburden.

Emissions from Loading and Unloading Material[1]

Alternative	Year	Volume of Material Loaded (cubic yards)	Weighting	EF PM10 (lb/ton)	Emissions PM10 (ton)	EF PM2.5 (lb/ton)	Emissions PM2.5 (ton)
	2014	345,200	0.06	0.00012	0.003	0.0000182	0.001
	2015		0.36		0.019		0.003
	2016		0.44		0.023		0.003
	2017		0.14		0.007		0.001
	2018	269,700	0.06		0.003		0.000
	2019		0.14		0.006		0.001
	2020		0.21		0.009		0.001
	2021		0.26		0.011		0.002
	2022		0.19		0.008		0.001
A	2023		0.14		0.006		0.001
	2014	328,600	0.06		0.003		0.000
	2015		0.45		0.022		0.003
	2016		0.32		0.016		0.002
	2017		0.12		0.006		0.001
	2018	555,500	0.11		0.004		0.001
	2019	226,900	0.14		0.005		0.001
	2020		0.22		0.007		0.001
	2021		0.27		0.009		0.001
	2022		0.20		0.007		0.001
B	2023		0.11		0.004		0.001
	2014	317,500	0.06		0.003		0.000
	2015		0.36		0.017		0.003
	2016		0.44		0.021		0.003
	2017		0.14		0.007		0.001
	2018	224,500	0.04		0.001		0.000
	2019		0.14		0.005		0.001
	2020		0.34		0.012		0.002
	2021		0.23		0.008		0.001
C	2022		0.25		0.008		0.001
	2014	272,000	0.06		0.002		0.000
	2015		0.45		0.019		0.003
	2016		0.32		0.013		0.002
	2017		0.12		0.005		0.001
	2018	460,250	0.09		0.003		0.000
	2019	188,250	0.14		0.004		0.001
	2020		0.34		0.010		0.001
	2021		0.23		0.007		0.001
D	2022		0.25		0.007		0.001

1. Emissions follow the methodology from AP-42 Chapter 11.9.

Emissions from Road Dust[1]

Alternative	Year	PM10 (ton)	PM2.5 (ton)
	2014	0.54	0.13
	2015	3.02	0.75
	2016	3.71	0.93
	2017	1.16	0.29
	2018	0.90	0.22
	2019	1.99	0.50
	2020	3.02	0.76
	2021	3.70	0.92
	2022	2.69	0.67
A	2023	1.92	0.48
	2014	0.57	0.14
	2015	4.31	1.08
	2016	3.09	0.77
	2017	1.17	0.29
	2018	1.21	0.30
	2019	1.72	0.43
	2020	2.63	0.66
	2021	3.26	0.81
	2022	2.47	0.62
B	2023	1.31	0.33
	2014	0.54	0.13
	2015	3.02	0.75
	2016	3.71	0.93
	2017	1.16	0.29
	2018	0.46	0.12
	2019	1.65	0.41
	2020	3.92	0.98
	2021	2.62	0.66
C	2022	2.82	0.71
	2014	0.57	0.14
	2015	4.31	1.08
	2016	3.09	0.77
	2017	1.17	0.29
	2018	0.91	0.23
	2019	1.65	0.41
	2020	3.92	0.98
	2021	2.62	0.65
D	2022	2.82	0.71

1. Emissions follow AP-42 Chpater 2.1.

Total Construction Emissions

Alternative	Year	CO	NOx	VOC	SOx	Total PM10	Total PM2.5	CO_2e
		Tons per Year						Metric Tons per Year
A	2014	12.69	32.63	2.69	0.03	2.72	1.67	3038.99
	2015	37.37	90.94	7.74	0.10	8.85	4.92	9201.07
	2016	38.05	97.79	8.56	0.11	8.86	5.17	10211.29
	2017	16.20	37.28	3.39	0.05	2.90	1.79	4315.36
	2018	20.57	52.68	4.34	0.05	5.68	3.37	4915.71
	2019	23.37	55.54	4.81	0.07	5.23	3.12	6332.30
	2020	46.01	117.20	10.05	0.13	10.61	6.60	12226.83
	2021	40.95	103.62	8.98	0.12	9.70	5.80	11054.36
	2022	21.08	49.85	4.36	0.06	5.37	2.89	5689.75
	2023	15.96	36.94	3.30	0.05	3.58	1.98	4425.74
B	2014	13.94	35.77	2.96	0.04	2.99	1.84	3348.01
	2015	41.94	104.20	8.90	0.11	10.70	5.78	10475.98
	2016	34.71	89.27	7.90	0.10	7.54	4.59	9464.02
	2017	17.32	39.09	3.56	0.05	3.07	1.87	4503.08
	2018	26.57	66.39	5.61	0.07	6.56	4.00	6565.43
	2019	23.31	55.39	4.80	0.07	4.96	3.04	6313.29
	2020	31.96	78.76	6.77	0.09	6.82	4.04	8495.37
	2021	23.83	56.24	4.92	0.07	6.46	3.47	6383.39
	2022	20.99	49.75	4.37	0.06	4.74	2.63	5744.95
	2023	13.57	31.72	2.83	0.04	2.72	1.61	3761.47
C	2014	12.69	32.63	2.69	0.03	2.72	1.67	3038.84
	2015	37.36	90.94	7.74	0.10	8.85	4.92	9200.64
	2016	38.05	97.79	8.56	0.11	8.85	5.17	10210.86
	2017	16.20	37.27	3.39	0.05	2.90	1.79	4314.97
	2018	9.83	23.72	1.99	0.03	2.10	1.25	2392.39
	2019	33.89	83.70	7.16	0.09	7.17	4.55	8759.08
	2020	32.09	79.80	6.95	0.09	9.67	5.36	8545.38
	2021	39.73	100.96	8.72	0.11	8.53	5.36	10612.44
	2022	20.77	49.51	4.38	0.06	5.37	2.84	5573.29
D	2014	13.94	35.77	2.96	0.04	2.99	1.84	3347.91
	2015	41.93	104.20	8.90	0.11	10.70	5.77	10475.67
	2016	34.71	89.26	7.90	0.10	7.54	4.59	9463.71
	2017	17.31	39.09	3.56	0.05	3.07	1.87	4502.77
	2018	15.84	37.45	3.27	0.04	3.11	1.91	4045.15
	2019	33.88	83.70	7.16	0.09	7.17	4.55	8758.14
	2020	32.08	79.80	6.95	0.09	9.67	5.36	8544.44
	2021	39.73	100.96	8.72	0.11	8.52	5.36	10611.49
	2022	20.77	49.51	4.38	0.06	5.37	2.84	5572.34
CEQA Threshold		100	10	10	27	15	15	NA
General Conformity de minimis Threshold		NA	10	10	NA	100	100	NA

1. Offroad PM is assumed to be the same for PM_{10} and $PM_{2.5}$.
2. Highlighted values exceed the CEQA Threshold.

Total Operational Emissions

Alternative	CO	NOx	VOC	SOx	PM10 Exhaust	PM10 Fugitive	PM10 Total	PM2.5 Exhaust	PM2.5 Fugitive	PM2.5 Total	CO2	CH4	CO2e
	tons										Metric Tons		
A	0.032	0.004	0.002	0.0001	0.0005	0.024	0.0243	0.0003	0.006	0.0062	5.21	0.00027	5.21
B	0.032	0.004	0.002	0.0001	0.0005	0.025	0.0256	0.0003	0.006	0.0066	5.21	0.00027	5.21
C	0.032	0.004	0.002	0.0001	0.0005	0.025	0.0257	0.0003	0.006	0.0066	5.21	0.00027	5.21
D	0.031	0.004	0.002	0.0001	0.0005	0.026	0.0262	0.0003	0.006	0.0067	5.01	0.00026	5.02
CEQA Threshold	100	10	10	27	NA	NA	15	NA	NA	15	NA	NA	NA
General Conformity de minimis Threshold	NA	10	10	NA	NA	NA	100	NA	NA	100	NA	NA	NA

Notes:

1. Trips and trip length is based on information provided by DWR and is consistent with traffic section assumptions.
2. Emission factors are based on EMFAC 2007 for 2014.
3. Fugitive dust emissions are from travel on paved roads based on AP-42 Chapter 13.1.

Operational Vehicle Trips and Trip Length

Alternative	Location	Activity	Trips/Activity	Frequency of Activity	Note	Total Trips	VMT
A	South Canal - river side control structure	Inspection of gates, seals	2	12	1	24	840
A	South Canal - river side control structure	Make adjustments	2	12	1	24	840
A	South Canal - river side control structure	Assessment after flows	2	12	1	24	840
A	South Canal - river side control structure	Inspection of ladder	2	12	1	24	840
A	South Canal - canal side control structure	Inspection of gates, seals	2	12	1	24	840
A	South Canal - canal side control structure	Make adjustments	2	12	1	24	840
A	South Canal - canal side control structure	Assessment after flows	2	12	1	24	840
A	San Mateo Avenue	Road closure	2	2		4	140
A	Screens Estimate	Inspections, flow verification, clear debris	2	120		240	8400
A	Screens Estimate	Velocity measurements	4	8		32	1120
A	Barriers Estimate	Inspection, flow verification, clear debris	2	120		240	8400
A	Barriers Estimate	Install/Remove barrier screens	4	10		40	1400
A	South Canal - river side control structure	Sediment removal from channel	4	2		8	280
A	South Canal - river side control structure	Lube gates	4	1		4	140
A	South Canal - river side control structure	Fish Ladder Cleaning	4	12	1	48	1680
A	South Canal - river side control structure	Fish attraction pipeline Cleaning	4	12	1	48	1680
A	South Canal - canal side control structure	Sediment removal from channel	8	5		40	1400
A	South Canal - canal side control structure	Lube gates	4	1		4	140
A	South Canal - canal side control structure	Channel Survey	8	5		40	1400
A	South Canal - canal side control structure	Channel reshaping	8	5		40	1400
A	San Mateo Avenue	Cleaning out culverts	8	2		16	560
A	San Mateo Avenue	Cleaning of debris off roadway	4	12	1	48	1680
A	Screens Estimate	Sediment removal from channel	4	2		8	280
A	Screens Estimate	Screens removal for cleaning	6	2		12	420
A	Screens Estimate	Screens removal for cleaning	2	2		4	140
A	Screens Estimate	Screens removal for cleaning	2	2		4	140
A	Screens Estimate	Grease and inspect pump/motor	4	12		48	1680
A	Screens Estimate	Brush inspection	4	12		48	1680
A	Screens Estimate	Trash Rack	4	12		48	1680
B	South Canal - river side control structure	Inspection of gates, seals	2	12	1	24	840
B	South Canal - river side control structure	Make adjustments	2	12	1	24	840
B	South Canal - river side control structure	Assessment after flows	2	12	1	24	840
B	South Canal - river side control structure	Inspection of ladder	2	12	1	24	840
B	South Canal - canal side control structure	Inspection of gates, seals	2	12	1	24	840
B	South Canal - canal side control structure	Make adjustments	2	12	1	24	840
B	South Canal - canal side control structure	Assessment after flows	2	12	1	24	840
B	San Mateo Avenue	Road closure	2	2		4	140
B	Chowchilla - river side control structure	Inspection of gates, seals	2	12	1	24	840
B	Chowchilla - river side control structure	Make adjustments	2	12	1	24	840
B	Chowchilla - river side control structure	Assessment after flows	2	12	1	24	840
B	Chowchilla - river side control structure	Inspection of ladder	2	12	1	24	840
B	Screens Estimate	Inspections, flow verification, clear debris	2	120		240	8400
B	Screens Estimate	Velocity measurements	4	8		32	1120
B	Barriers Estimate	Inspection, flow verification, clear debris	2	120		240	8400
B	Barriers Estimate	Install/Remove barrier screens	4	10		40	1400
B	Bifurcation - river side control structure	Sediment removal from channel	4	2		8	280
B	Bifurcation - river side control structure	Lube gates	4	1		4	140
B	Bifurcation - river side control structure	Fish Ladder Cleaning	4	12	1	48	1680

Operational Vehicle Trips and Trip Length

Alternative	Location	Activity	Trips/Activity	Frequency of Activity	Note	Total Trips	VMT
B	Bifurcation - river side control structure	Fish attraction pipeline Cleaning	4	12	1	48	1680
B	Bifurcation - canal side control structure	Sediment removal from channel	8	1		8	280
B	Bifurcation - canal side control structure	Lube gates	4	1		4	140
B	Bifurcation - canal side control structure	Channel Survey	8	5		40	1400
B	Bifurcation - canal side control structure	Channel reshaping	8	5		40	1400
B	San Mateo Avenue	Cleaning out culverts	8	2		16	560
B	San Mateo Avenue	Cleaning of debris off roadway	4	12	1	48	1680
B	Screens Estimate	Sediment removal from channel	4	2		8	280
B	Screens Estimate	Screens removal for cleaning	6	2		12	420
B	Screens Estimate	Screens removal for cleaning	2	2		4	140
B	Screens Estimate	Screens removal for cleaning	2	2		4	140
B	Screens Estimate	Grease and inspect pump/motor	4	12		48	1680
B	Screens Estimate	Brush inspection	4	12		48	1680
B	Screens Estimate	Trash Rack	4	12		48	1680
C	Fresno Slough Dam Estimate	Inspection of gates, seals	2	12	1	24	840
C	Fresno Slough Dam Estimate	Make adjustments	2	12	1	24	840
C	Fresno Slough Dam Estimate	Monitor for seepage	2	12	1	24	840
C	Short Canal - canal side control structure	Inspection of gates, seals	2	12	1	24	840
C	Short Canal - canal side control structure	Make adjustments	2	12	1	24	840
C	Short Canal - canal side control structure	Assessment after flows	2	12	1	24	840
C	Mendota Dam	Installation/Removal of Flashboards	2	12	1	24	840
C	Mendota Dam	Make adjustments	2	12	1	24	840
C	Mendota Dam	Assessment after flows	2	12	1	24	840
C	Mendota Dam	Inspection of ladder	2	12	1	24	840
C	San Mateo Avenue	Road closure	2	2		4	140
C	Chowchilla - river side control structure	Inspection of gates, seals	2	12	1	24	840
C	Chowchilla - river side control structure	Make adjustments	2	12	1	24	840
C	Chowchilla - river side control structure	Assessment after flows	2	12	1	24	840
C	Chowchilla - river side control structure	Inspection of ladder	2	12	1	24	840
C	Screens Estimate	Inspections, flow verification, clear debris	2	120		240	8400
C	Screens Estimate	Velocity measurements	4	8		32	1120
C	Barriers Estimate	Inspection, flow verification, clear debris	2	120		240	8400
C	Barriers Estimate	Install/Remove barrier screens	4	10		40	1400
C	Fresno Slough Dam Estimate	Sediment removal from channel	4	2		8	280
C	Fresno Slough Dam Estimate	Lube gates	4	1		4	140
C	Short Canal - canal side control structure	Sediment removal from channel	8	5		40	1400
C	Short Canal - canal side control structure	Lube gates	4	1		4	140
C	San Mateo Avenue	Cleaning out culverts	8	2		16	560
C	San Mateo Avenue	Cleaning of debris off roadway	4	12	1	48	1680
C	Chowchilla Bifurcation Structure Estimate	Sediment removal from channel	8	2		16	560
C	Chowchilla Bifurcation Structure Estimate	Lube gates	8	1		8	280
C	Mendota Dam	Fish Ladder Cleaning	4	12	1	48	1680
C	Mendota Dam	Sediment removal from channel	4	2		8	280
C	Screens Estimate	Sediment removal from channel	4	2		8	280
C	Screens Estimate	Screens removal for cleaning	6	2		12	420
C	Screens Estimate	Screens removal for cleaning	2	2		4	140
C	Screens Estimate	Screens removal for cleaning	2	2		4	140
C	Screens Estimate	Grease and inspect pump/motor	4	12		48	1680

Operational Vehicle Trips and Trip Length

Alternative	Location	Activity	Trips/Activity	Frequency of Activity	Note	Total Trips	VMT
C	Screens Estimate	Brush inspection	4	12		48	1680
C	Screens Estimate	Trash Rack	4	12		48	1680
D	Fresno Slough Dam Estimate	Inspection of gates, seals	2	12	1	24	840
D	Fresno Slough Dam Estimate	Make adjustments	2	12	1	24	840
D	Fresno Slough Dam Estimate	Monitor for seepage	2	12	1	24	840
D	Mendota Dam	Inspection of ladder	2	12	1	24	840
D	North Canal - river side control structure	Inspection of gates, seals	2	12	1	24	840
D	North Canal - river side control structure	Make adjustments	2	12	1	24	840
D	North Canal - river side control structure	Assessment after flows	2	12	1	24	840
D	North Canal - river side control structure	Inspection of ladder	2	12	1	24	840
D	North Canal - canal side control structure	Inspection of gates, seals	2	12	1	24	840
D	North Canal - canal side control structure	Make adjustments	2	12	1	24	840
D	North Canal - canal side control structure	Assessment after flows	2	12	1	24	840
D	Screens Estimate	Inspections, flow verification, clear debris	2	120		240	8400
D	Screens Estimate	Velocity measurements	4	8		32	1120
D	Barriers Estimate	Inspection, flow verification, clear debris	2	120		240	8400
D	Barriers Estimate	Install/Remove barrier screens	4	10		40	1400
D	Fresno Slough Dam Estimate	Sediment removal from channel	4	2		8	280
D	Fresno Slough Dam Estimate	Lube gates	4	1		4	140
D	North Canal - river side control structure	Sediment removal from channel	4	2		8	280
D	North Canal - river side control structure	Lube gates	4	1		4	140
D	North Canal - river side control structure	Fish Ladder Cleaning	4	12	1	48	1680
D	North Canal - river side control structure	Fish attraction pipeline Cleaning	4	12	1	48	1680
D	North Canal - canal side control structure	Sediment removal from channel	8	5		40	1400
D	North Canal - canal side control structure	Lube gates	4	1		4	140
D	North Canal - canal side control structure	Channel Survey	8	5		40	1400
D	North Canal - canal side control structure	Channel reshaping	8	5		40	1400
D	Mendota Dam	Fish Ladder Cleaning	4	12	1	48	1680
D	Mendota Dam	Sediment removal from channel	4	2		8	280
D	Screens Estimate	Sediment removal from channel	4	2		8	280
D	Screens Estimate	Screens removal for cleaning	6	2		12	420
D	Screens Estimate	Screens removal for cleaning	2	2		4	140
D	Screens Estimate	Screens removal for cleaning	2	2		4	140
D	Screens Estimate	Grease and inspect pump/motor	4	12		48	1680
D	Screens Estimate	Brush inspection	4	12		48	1680
D	Screens Estimate	Trash Rack	4	12		48	1680

Notes:

1. Trips are based on information provided by DWR and the Project Description. For those designated with a note of 1 these did not specify a frequency and the frequency was assumed to average once per month.
2. Trip length was assumed to be 35 miles which is the approximate distance from Madera or Fresno.

Annual Average Concentration of DPM at Maximum Exposed Sensitive Receptor

Alternative	Receptor Type	UTMX	UTMY	Year	Concentration (ug/m^3)
A		733752	4071015	2014	0.046
A		733752	4071015	2015	0.033
A		733752	4071015	2016	0.038
A		733752	4071015	2017	0.006
A		733752	4071015	2018	0.040
A		733752	4071015	2019	0.020
A		733752	4071015	2020	0.052
A		733752	4071015	2021	0.029
A		733752	4071015	2022	0.022
A	School Child	733752	4071015	2023	0.010
A		735610	4074256	2014	0.046
A		735610	4074256	2015	0.114
A		735610	4074256	2016	0.152
A		735610	4074256	2017	0.058
A		735610	4074256	2018	0.354
A		735610	4074256	2019	0.261
A		735610	4074256	2020	0.313
A		735610	4074256	2021	0.296
A		735610	4074256	2022	0.220
A	Resident Child	735610	4074256	2023	0.088
B		733752	4071015	2014	0.047
B		733752	4071015	2015	0.041
B		733752	4071015	2016	0.028
B		733752	4071015	2017	0.007
B		733752	4071015	2018	0.043
B		733752	4071015	2019	0.020
B		733752	4071015	2020	0.019
B		733752	4071015	2021	0.018
B		733752	4071015	2022	0.017
B	School Child	733752	4071015	2023	0.007
B		735610	4074256	2014	0.049
B		735610	4074256	2015	0.130
B		735610	4074256	2016	0.134
B		735610	4074256	2017	0.059
B		735610	4074256	2018	0.246
B		735610	4074256	2019	0.295
B		735610	4074256	2020	0.342
B		735610	4074256	2021	0.283
B		735610	4074256	2022	0.208
B	Resident Child	735610	4074256	2023	0.090
C		733752	4071015	2014	0.046
C		733752	4071015	2015	0.033
C		733752	4071015	2016	0.038
C		733752	4071015	2017	0.006

C		733752	4071015	2018	0.017
C		733752	4071015	2019	0.031
C		733752	4071015	2020	0.108
C		733752	4071015	2021	0.070
C	School Child	733752	4071015	2022	0.013
C		735610	4074256	2014	0.042
C		735610	4074256	2015	0.105
C		735610	4074256	2016	0.139
C		735610	4074256	2017	0.053
C		735610	4074256	2018	0.032
C		735610	4074256	2019	0.200
C		735610	4074256	2020	0.339
C		735610	4074256	2021	0.572
C	Resident Child	735610	4074256	2022	0.211
D		733752	4071015	2014	0.047
D		733752	4071015	2015	0.041
D		733752	4071015	2016	0.028
D		733752	4071015	2017	0.006
D		733752	4071015	2018	0.020
D		733752	4071015	2019	0.031
D		733752	4071015	2020	0.109
D		733752	4071015	2021	0.074
D	School Child	733752	4071015	2022	0.013
D		739738	4072804	2014	0.097
D		739738	4072804	2015	0.239
D		739738	4072804	2016	0.228
D		739738	4072804	2017	0.097
D		739738	4072804	2018	0.094
D		739738	4072804	2019	0.152
D		739738	4072804	2020	0.207
D		739738	4072804	2021	0.503
D	Resident Child	739738	4072804	2022	0.058

Health Risk Assessment Exposure and Toxicity Values

Population	Year	Age	DBR	EF	TAF	CF	A	ED	AT	ASF
	2014		361	350	1	0.000001	1	1	25,550	10
	2015	1	1090	350	1	0.000001	1	1	25,550	10
	2016	2	1090	350	1	0.000001	1	1	25,550	10
	2017	3	861	350	1	0.000001	1	1	25,550	3
	2018	4	861	350	1	0.000001	1	1	25,550	3
	2019	5	861	350	1	0.000001	1	1	25,550	3
	2020	6	861	350	1	0.000001	1	1	25,550	3
	2021	7	861	350	1	0.000001	1	1	25,550	3
	2022	8	861	350	1	0.000001	1	1	25,550	3
Resident Child	2023	9	861	350	1	0.000001	1	1	25,550	3
	2014		520	180	4.2	0.000001	1	1	25,550	3
	2015		520	180	4.2	0.000001	1	1	25,550	3
	2016		520	180	4.2	0.000001	1	1	25,550	3
	2017		520	180	4.2	0.000001	1	1	25,550	3
	2018		520	180	4.2	0.000001	1	1	25,550	3
	2019		520	180	4.2	0.000001	1	1	25,550	3
	2020		520	180	4.2	0.000001	1	1	25,550	3
	2021		520	180	4.2	0.000001	1	1	25,550	3
	2022		520	180	4.2	0.000001	1	1	25,550	3
School Child	2023		520	180	4.2	0.000001	1	1	25,550	3

1. Values for exposure are based on recommendations from SJVAPCD 2015 & OEHHA 2015.
2. The averaging time (AT) is for a 70 year exposure duration (70 years x 365 days = 25,550).

Abbreviations:
A = Inhalation absorption factor (unitless)
ASF = Age sensitivity factor (unitless)
AT = Averaging Time (days)
CF = Conversion Factor (m3/L and mg/ µg)
DBR = Daily Breathing Rate (L/kg-day)
EF = Exposure Frequency (days/year)
ED = Exposure Duration (years)
TAF = Time Adjustment Factor (unitless)

Health Impacts at Maximally Exposed Sensitive Receptor

Receptor Type	Alternative	UTM X (m)	UTM Y (m)	Maximum Cancer Risk at Receptor in a million	Chronic HI
Resident Child	A	735610	4074256	108.08	0.07
	B	735610	4074256	105.35	0.07
	C	735610	4074256	97.13	0.11
	D	739738	4072804	125.13	0.10
School Child	A	733752	4071015	15.06	0.01
	B	733752	4071015	12.56	0.01
	C	733752	4071015	18.39	0.02
	D	733752	4071015	18.72	0.02

Notes:

1. The risk is based on a cancer potency factor for DPM of 1.1. Individual years concentration and age specific factors were used to arrive at the total risk.

2. The Chronic HI is based on a REL for DPM of 5. The year with the highest concentration was used to calculate HI.

Model Source Parameters

Source ID	Location Type	Model Source Type	Number of Sources	Emission Rate (grams/second)	Length of Side (meters)	Release Height (meters)	Initial Lateral Dimension (meters)	Initial Vertical Dimension (meters)
CCANAL	Construction Area	Volume	589	0.0017	50	5	23.26	1.4
CHILLA	Construction Area	Volume	56	0.0179	50	5	23.26	1.4
CNS	Construction Area	Volume	254	0.0039	200	5	93.02	1.4
CWB	Construction Area	Volume	412	0.0024	200	5	93.02	1.4
FNS	Construction Area	Volume	272	0.0037	200	5	93.02	1.4
FSDC	Construction Area	Volume	989	0.0010	50	5	23.26	1.4
FWN	Construction Area	Volume	368	0.0027	200	5	93.02	1.4
LONE	Construction Area	Volume	4	0.2500	50	5	23.26	1.4
NCANAL	Construction Area	Volume	1044	0.0010	50	5	23.26	1.4
SCANAL	Construction Area	Volume	711	0.0014	50	5	23.26	1.4
SMCROSS	Construction Area	Volume	35	0.0286	50	5	23.26	1.4
BASS	Road	Volume	145	0.0069	13.5	2.55	6.28	2.37
HI180E	Road	Volume	457	0.0022	13.5	2.55	6.28	2.37
HI180W	Road	Volume	149	0.0067	13.5	2.55	6.28	2.37
OVERLAP	Road	Volume	32	0.0313	13.5	2.55	6.28	2.37
SANMATEO	Road	Volume	318	0.0031	13.5	2.55	6.28	2.37

Notes:

1. Construction areas were modeled as adjacent volume sources to cover the area contained by construciton activities
2. Roads were modeled as adjacent volume sources with a road width of 7.5 meters and 6 meter buffer.

Sensitive Receptors

UTM X (meter)	UTM Y (Meter)	Name	Type
733694	4071080	Washington Elementary	School Child
733752	4071015	Washington Elementary	School Child
733538	4070955	Washington Elementary	School Child
733603	4070867	Washington Elementary	School Child
734294	4070090	Mendota High	School Child
734235	4071367	Migrant Head Start	School Child
733005	4070881	Community Day	School Child
732939	4070783	HeadStart	School Child
733270	4071359	Mccabe	School Child
733256	4071101	Mccabe	School Child
733758	4072290	Mendota Elementary	School Child
733806	4072192	Mendota Elementary	School Child
733670	4072095	Mendota Elementary	School Child
736165	4076646	Resident	Resident Child
736142	4076652	Resident	Resident Child
736119	4076657	Resident	Resident Child
736101	4076662	Resident	Resident Child
736268	4076567	Resident	Resident Child
733522	4075870	Resident	Resident Child
733503	4075810	Resident	Resident Child
733490	4075730	Resident	Resident Child
733478	4075697	Resident	Resident Child
734427	4075111	Resident	Resident Child
743494	4075470	Resident	Resident Child
733964	4075622	Resident	Resident Child
734243	4072940	Resident	Resident Child
734224	4072962	Resident	Resident Child
734188	4072900	Resident	Resident Child
743177	4072824	Resident	Resident Child
734718	4073308	Resident	Resident Child
737247	4072216	Resident	Resident Child
735610	4074256	Resident	Resident Child
738884	4071994	Resident	Resident Child
739812	4071686	Resident	Resident Child
739802	4072537	Resident	Resident Child
739762	4072580	Resident	Resident Child
739738	4072804	Resident	Resident Child
742097	4072010	Resident	Resident Child
734441	4075063	Resident	Resident Child
734441	4075077	Resident	Resident Child
734433	4075098	Resident	Resident Child

Mendota Pool Bypass and Reach 2B Improvements Project

Final
Environmental Impact Statement/Report

Appendix 4-B Air Quality Health Risk Assessment

SAN JOAQUIN RIVER
RESTORATION PROGRAM

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Health Risk Assessment

The construction equipment and material hauling vehicles emit diesel particulate matter that is classified as a toxic air contaminant (TAC). Gasoline-fueled vehicles emit various TACs in much smaller quantities and health toxicity compared to diesel particulate matter (DPM). Thus, gasoline fueled emission sources have not been included further in this health risk assessment (HRA). The emissions of DPM sources are used in the HRA and the details of the emission rates used are contained in Appendix 4-A – Tables.

In order to evaluate the impacts of DPM on nearby sensitive receptors, a HRA was conducted consistent with the California Office of Environmental Health Hazard Assessment (OEHHA2012, 2003, and 2015) and San Joaquin Valley Air Pollution Control District guidelines as most recently updated in 2015 (SJVAPCD 2006, 2015) for determining local community risks and hazards. The HRA evaluated the health risks associated with the Project emissions from construction equipment and material hauling vehicles.

Dispersion Modeling

The dispersion of emissions was simulated using the U.S. Environmental Protection Agency (EPA) regulatory approved model called AERMOD. The model inputs and assumptions are summarized below. AERMOD input files can be found in Appendix 4-C – AERMOD Input Files.

- **Meteorological Data:** AERMOD requires meteorological data as an input into the model. This is typically processed using AERMET, a pre-processor to AERMOD. AERMET requires surface meteorological data, upper air meteorological data and surface parameter data. The SJVAPCD has several meteorological data sets that have been processed using AERMET available on its website[1]. For this Project the pre-processed data for Fresno was utilized since it is one of the closest data sets available and has the most conservative wind speeds. Five years of meteorological data from 2005 through 2009 was utilized.
- **Terrain**: Elevation and land use data was imported from the National Elevation Dataset (NED) maintained by the United States Geological Survey (USGS). An important consideration in an air dispersion modeling analysis is the selection of rural or urban dispersion coefficients. Based on the rural location of the project, rural dispersion coefficients were selected for in the model..
- **Receptors:** Receptors were modeled at discrete receptor locations. Receptors were modeled at a height of 1.5 meters.
- **Source Parameters:** Volume sources were utilized to model construction work areas. A work area was divided into adjacent volume sources with a release height of 5 meters. Roads were modeled using adjacent volume sources with a side length of 13.5 meters based on an average road width of 7.5 meters plus 6 feet buffer as recommended by EPA

[1] In December of 2012, the EPA released a new version of AERMET and AERMOD which included some updates involving the meteorological data. At the time of preparation of this document, the SJVAPCD has not reprocessed the meteorological data sets. Communication with Glenn Reed at SJVAPCD recommended that users continue to use the older and currently available meteorological data sets with the new version of AERMOD until updated guidance has been provided by SJVAPCD (Reed 2013).

(EPA 2012). Sources were assumed to be rural sources. Details of source parameters are available in Appendix 4-A – Tables.

- **Emission rates:** Emissions were modeled using the χ/Q ("chi over q") method, such that each source has unit emission rates (i.e., 1 gram per second [g/s]), and the model estimates dispersion factors (with units of [ug/m^3]/[g/s]). For annual average ambient air concentrations, the estimated annual average dispersion factors were multiplied by the annual average emission rates for each source. For simplicity, the model assumes a constant emission rate during the entire year. Air concentrations are calculated as follows:

$$\text{Conc} = \left({}^{\chi}/_{Q}\right) \times (ER)$$

Where:

Conc	=	Chemical concentration in air (µg/m^3)
${}^{\chi}/_{Q}$	=	Modeled dispersion factor in (ug/m^3)/(g/s)
ER	=	Chemical emission rate for modeled source (g/s)

Exposure Factors

Potential sensitive receptors such as residents, school children, day cares, and hospitals were searched for in the vicinity of the Project. Schools and day cares were identified using data available from the San Joaquin Valley Unified Air Pollution Control District[2]. This information was also compared to information available for the City of Mendota from several State databases (Department of Education 2013, Automated Licensing Information and Report Tracking System 2013, and California Community Care Licensing Division 2013) which includes schools, day cares, and health care facilities. A search of key words using a web-based search engine verified that there were no additional schools, day cares, or health facilities in the area. There are a large number of residential houses located in the City of Mendota. There are a few isolated locations of residential units located closer to the Project vicinity. These were identified and added as discrete sensitive receptors to the air dispersion model. The maximally exposed residential or school receptor was reported.

The exposure parameters used for estimating excess lifetime cancer risks and chronic non-cancer Hazard Index (HI) for all potentially exposed populations were obtained using risk assessment guidelines from SJVAPCD and OEHHA, unless otherwise noted, and are presented in Appendix 4-A – Tables.

The inhalation dose is a function of the concentration of a chemical and the intake of that chemical. The dose can be calculated as follows:

$$Dose = \frac{Conc * TAF * DBR * A * EF * ED * CF}{AT}$$

[2] KML files are available in the Inventory and Modeling Resources page (SJVAPCD 2013). Available at www.valleyair.org/busind/pto/Resources/Resources_idx.htm

Where:

Dose	=	Dose of chemical (mg/kg-day)
Conc	=	Chemical concentration in air (μg/m^3)
TAF	=	Time Adjustment Factor[3] (unitless)
DBR	=	Daily Breathing Rate (L/kg-day)
A	=	Inhalation Absorption Factor (unitless)
EF	=	Exposure Frequency (days/year)
ED	=	Exposure Duration (years)
AT	=	Averaging Time (days)
CF	=	Conversion Factor (m^3/L and mg/ μg)

Toxicity Assessment

The toxicity assessment characterizes the relationship between the magnitude of exposure and the nature and magnitude of adverse health effects that may result from such exposure. For purposes of calculating exposure criteria to be used in risk assessments, adverse health effects are classified into two broad categories: cancer and non-cancer endpoints. Toxicity values used to estimate the likelihood of adverse effects occurring in humans at different exposure levels are identified as part of the toxicity assessment component of a risk assessment.

In this HRA, diesel exhaust, a complex mixture that includes hundreds of individual constituents, is identified by the State as a known carcinogen is the only chemical of potential concern quantified. Under California regulatory guidelines, DPM is used as a surrogate measure of carcinogen exposure for the mixture of chemicals that make up diesel exhaust as a whole.

The estimated excess lifetime cancer risk for a resident child, daycare child, and school child were adjusted using the age sensitivity factors (ASFs) recommended by OEHHA (OEHHA 2015). This approach accounts for an "anticipated special sensitivity to carcinogens" of infants and children. Cancer risk estimates are weighted by a factor of ten (10) for exposures that occur from the third trimester of pregnancy to two years of age and by a factor of three (3) for exposures that occur from two years through 15 years of age. No weighting factor (i.e. an ASF of one, which is equivalent to no adjustment) is applied to ages 16 to 70 years.

Risk Characterization

Excess lifetime cancer risks are estimated as the upper-bound incremental probability that an individual would develop cancer over a lifetime as a direct result of exposure to potential

[3] This adjusts the concentration to account for overlap in time of sources and receptors. This is used for the school and daycare receptors and is consistent with OEHHA's worker modeled concentration adjustment factor for an operating schedule of 8 hrs per day and 5 days per week.

carcinogens. The estimated risk is expressed as a unitless probability. The cancer risk attributed to a chemical is calculated by multiplying the chemical intake or dose at the human exchange boundaries (e.g., lungs) by the chemical-specific cancer potency factor (CPF).

The equation used to calculate the potential excess lifetime cancer risk for the inhalation pathway is as follows:

$$Risk_i = Dose * CPF_i * ASF$$

Where:

$Risk_i$ = Cancer Risk; incremental probability of an individual developing cancer as a result of inhalation exposure to a particular potential carcinogen (unitless)

Dose = Dose of chemical (mg/kg-day)

CPF_i = Cancer Potency Factor for $Chemical_i$ (mg chemical/kg body weight-day)$^{-1}$

ASF = Age Sensitivity Factor (unitless)

The potential for exposure to result in chronic non-cancer effects is evaluated by comparing the estimated annual average air concentration (which is equivalent to the average daily air concentration) to the chemical-specific non-cancer chronic reference exposure levels (RELs). When calculated for a single chemical, the comparison yields a ratio termed a hazard quotient (HQ). To evaluate the potential for adverse chronic non-cancer health effects from simultaneous exposure to multiple chemicals, the HQs for all chemicals are summed, yielding an HI. For evaluation of the Project, DPM is the only pollutant evaluated for chronic non-cancer risks; therefore the HQ for DPM is the same as the overall HI.

The equations used to calculate the chemical-specific HQs and the overall HI are:

$$Chronic\ HQ_i = C_i/REL_i$$

$$Chronic\ HI = \sum HQ_i$$

Where:

Chronic HQ_i = Chronic Hazard Quotient for $Chemical_i$ (unitless)

Chronic HI = Hazard Index (unitless)

Ci = Annual Average Air Concentration for $Chemical_i$ (µg/m^3)

REL_i = Chronic Non-cancer Reference Exposure Level for $Chemical_i$ (µg/m^3)

No acute non-cancer impacts were estimated since there is no acute reference exposure level for DPM.

References

Automated Licensing Information and Report Tracking System. 2013. Available at: http://www.alirts.oshpd.ca.gov/AdvSearch.aspx

California Community Care Licensing Division (CCLD). 2013. *CCLD Facility Search Form*. Available at: https://secure.dss.cahwnet.gov/ccld/securenet/ccld_search/ccld_search.aspx

Office of Environmental Health Hazard Assessment (OEHHA). 2003. *Air Toxics Hot Spots Program Risk Assessment Guidelines The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments.* August.

Office of Environmental Health Hazard Assessment (OEHHA). 2009. *Technical Support Document for Cancer Potency Factors: Methodologies for Derivation, Listing of Available Values, and Adjustment to Allow for Early Life Stage Exposures*, May.

Office of Environmental Health Hazard Assessment (OEHHA). 2012. *Air Toxics Hot Spots Program Risk Assessment Guidelines Technical Support Document for Exposure Assessment and Stochastic Analysis.* August.

Office of Environmental Health Hazard Assessment (OEHHA). 2015. *Air Toxics Hot Spots Program Risk Assessment Guidelines, Guidance Manual for Preparation of Health Risk Assessments.* February.

Reed, G., pers. comm. 2013. Personal Communication with Glenn Reed, SJVAPCD Senior Air Quality Specialist.

San Joaquin Valley Air Pollution Control District (SJVAPCD). 2006. *Draft Guidance for Air Dispersion Modeling*. August.

San Joaquin Valley Air Pollution Control District (SJVAPCD). 2015. Final Staff Report, Update to District's Risk Management Policy to Address ORHHA's Revised Risk Assessment Guidance Document. May.

U.S. Environmental Protection Agency (EPA). 2012. *Haul Road Work Group Final Report Submission into EPA-OAQPS.* March.

Mendota Pool Bypass and Reach 2B Improvements Project

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Appendix 17-A Certification of Calibration for Ambient Noise Survey Equipment

SAN JOAQUIN RIVER
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CERTIFICATE OF CALIBRATION
17235-1
FOR BRÜEL & KJÆR
HANDHELD ANALYZER

Model **2250**

With Microphone **4189**
With Preamplifier **ZC0032**

Serial No. **2672071**
ID No. **N/A**
Serial No. **2662748**
ID# **10617**
P.O. # **Verbal**

Customer: **URS Corporation**
Santa Ana, CA 92705

was tested and met factory specifications at the points tested
according to the Referenced Test Procedure

on **17 FEB 2010** **BY** **HAROLD LYNCH**
Service Manager

As received condition: Within Specification.
Re-calibration due on: **17 FEB 2012**

Certified References*

Mfg.	Type	Serial No.	Date Due
B&K	2636	1423390	05 JAN 2011
B&K	1049	1464545	09 JUN 2010
HP	34401A	3146A48348	18 JUN 2010
HP	3458A	2823A07179	23 JUN 2010
B&K	4226	2141942	07 DEC 2010
B&K	4231	1723623	30 JUN 2010

Performed in Compliance with ANSI, NCSL Z-540-1, 1994
and ISO 17025, ISO 9001:2000 Certification NQA No. 11252
*References are traceable to NIST (National Institute of Standards and Technology).

Note: For calibration data see enclosed pages.
The data represent both "as found" and "as left" conditions.

Reference Test Procedure: **ACCT Procedure 2250 Ver. 2.0**

Brüel & Kjær Factory Service Instructions: **2250**

Temperature	Relative Humidity	Barometric Pressure
23°C	**32%**	**986.33** hPa

Note: This calibration report shall not be reproduced, except in full, without written consent by Odin Metrology, Inc..

Signed: **ODIN METROLOGY, INC.**

CALIBRATION OF BRÜEL & KJÆR INSTRUMENTS
3533 OLD CONEJO ROAD; SUITE 125 THOUSAND OAKS CA 91320
PHONE: (805) 375-0830 FAX: (805) 375-0405

2250/2270 SOFTWARE LICENSE

	BZ7230 ver. 3.x
License/Lizenz/Licence/Licencia/Licenza	0526 9F64 75AF CA02
Serial No./Seriennummer/Numéro de série Nº de Serie/Nr. di serie	2672071

BR1625-11

Brüel & Kjær

MANUFACTURER'S CERTIFICATE OF CONFORMANCE

We certify that Brüel & Kjær -2250--- Serial No 2672071
has been tested and passed all production tests, confirming compliance with the manufacturer's published specification at the date of the test.

The final test has been performed using calibrated equipment, traceable to National or International Standards or by ratio measurements.

Brüel & Kjær is certified under ISO 9001:2000 assuring that all calibration data for test equipment are retained on file and are available for inspection upon request.

Nærum 28-jan-2009

Torben Bjørn
Vice President
Operations

Please note that this document is not a calibration certificate, for information on our calibration services please contact your nearest Brüel & Kjær Service Center.

BA0238-15

WORLD HEADQUARTERS: DK-2850 Nærum · Denmark

Brüel & Kjær

PCB PIEZOTRONICS
A PCB GROUP COMPANY

Certificate of Calibration and Conformance

Certificate Number 2011-151007

Instrument Model CAL200, Serial Number 2794, was calibrated on 02NOV2011. The instrument meets factory specifications per Procedure D0001.8190.

Instrument found to be in calibration as received: YES
Date Calibrated: 02NOV2011
Calibration due: 02NOV2013

Calibration Standards Used

MANUFACTURER	MODEL	SERIAL NUMBER	INTERVAL	CAL. DUE	TRACEABILITY NO.
Larson Davis	2559	2504	12 Months	29NOV2011	17865-1
PCB	1502B02FJ15PSIA	1342	12 Months	06DEC2011	3374488329
Larson Davis	2900	0661	12 Months	05APR2012	2011-141857
Hewlett Packard	34401A	3146A10352	12 Months	21AUG2012	5335364
Larson Davis	PRM915	0112	12 Months	09SEP2012	2011-148845
Larson Davis	PRM902	0480	12 Months	09SEP2012	2011-148846
Larson Davis	MTS1000/2201	0111	12 Months	09SEP2012	SM090911

Reference Standards are traceable to the National Institute of Standards and Technology (NIST)

Calibration Environmental Conditions

Environmental test conditions as shown on calibration report.

Affirmations

This Certificate attests that this instrument has been calibrated under the stated conditions with Measurement and Test Equipment (M&TE) Standards traceable to the U.S. National Institute of Standards and Technology (NIST). All of the Measurement Standards have been calibrated to their manufacturers' specified accuracy / uncertainty. Evidence of traceability and accuracy is on file at Provo Engineering & Manufacturing Center. An acceptable accuracy ratio between the Standard(s) and the item calibrated has been maintained. This instrument meets or exceeds the manufacturer's published specification unless noted.

This calibration complies with the requirements of ISO 17025 and ANSI Z540. The collective uncertainty of the Measurement Standard used does not exceed 25% of the applicable tolerance for each characteristic calibrated unless otherwise noted.

The results documented in this certificate relate only to the item(s) calibrated or tested. A one year calibration is recommended, however calibration interval assignment and adjustment are the responsibility of the end user. This certificate may not be reproduced, except in full, without the written approval of the issuer.

Before: 114.06 dB, 94.05 dB, 1000.1 Hz @ sea level.
After: Refer to Certificate of Measured Output.

Signed: Scott Montgomery
Technician: Scott Montgomery

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Provo Engineering and Manufacturing Center, 1681 West 820 North, Provo, Utah 84601
Toll Free: 888.258.3222 Telephone: 716.926.8243 Fax: 716.926.8215
ISO 9001-2008 Certified

PCB PIEZOTRONICS
A PCB GROUP COMPANY

Certificate of Calibration and Conformance

Certificate Number 2011-151300

Instrument Model 820, Serial Number 1768, was calibrated on 08NOV2011. The instrument meets factory specifications per Procedure D0001.8160, ANSI S1.4 1983, IEC 651-Type 1 1979, and IEC 804-Type 1 1985.

Instrument found to be in calibration as received: YES
Date Calibrated: 08NOV2011
Calibration due: 08NOV2013

Calibration Standards Used

MANUFACTURER	MODEL	SERIAL NUMBER	INTERVAL	CAL. DUE	TRACEABILITY NO.
Larson Davis	LDSigGn/2239	0099 / 0104	12 Months	18JAN2012	2011-138645

Reference Standards are traceable to the National Institute of Standards and Technology (NIST)

Calibration Environmental Conditions

Temperature: 23 ° Centigrade

Relative Humidity: 25 %

Affirmations

This Certificate attests that this instrument has been calibrated under the stated conditions with Measurement and Test Equipment (M&TE) Standards traceable to the U.S. National Institute of Standards and Technology (NIST). All of the Measurement Standards have been calibrated to their manufacturers' specified accuracy / uncertainty. Evidence of traceability and accuracy is on file at Provo Engineering & Manufacturing Center. An acceptable accuracy ratio between the Standard(s) and the item calibrated has been maintained. This instrument meets or exceeds the manufacturer's published specification unless noted.

This calibration complies with the requirements of ISO 17025 and ANSI Z540. The collective uncertainty of the Measurement Standard used does not exceed 25% of the applicable tolerance for each characteristic calibrated unless otherwise noted.

The results documented in this certificate relate only to the item(s) calibrated or tested. A one year calibration is recommended, however calibration interval assignment and adjustment are the responsibility of the end user. This certificate may not be reproduced, except in full, without the written approval of the issuer.

"AS RECEIVED" data same as shipped data.
Tested with PRM828-2751

Signed: Ron Harris
Technician: Ron Harris

Page 1 of 1

Provo Engineering and Manufacturing Center, 1681 West 820 North, Provo, Utah 84601
Toll Free: 888.258.3222 Telephone: 716.926.8243 Fax: 716.926.8215
ISO 9001-2008 Certified

PCB PIEZOTRONICS
A PCB GROUP COMPANY

Certificate of Calibration and Conformance

Certificate Number 2010-131816

Instrument Model 820, Serial Number 1597, was calibrated on 16JUL2010. The instrument meets factory specifications per Procedure D0001.8160, ANSI S1.4 1983, IEC 651-Type 1 1979, and IEC 804-Type 1 1985.

Instrument found to be in calibration as received: YES
Date Calibrated: 16JUL2010
Calibration due: 16JUL2012

Calibration Standards Used

MANUFACTURER	MODEL	SERIAL NUMBER	INTERVAL	CAL. DUE	TRACEABILITY NO.
Larson Davis	LDSigGn/2209	0277 / 0109	12 Months	24MAR2011	2010-127832

Reference Standards are traceable to the National Institute of Standards and Technology (NIST)

Calibration Environmental Conditions

Temperature: 23 ° Centigrade

Relative Humidity: 33 %

Affirmations

This Certificate attests that this instrument has been calibrated under the stated conditions with Measurement and Test Equipment (M&TE) Standards traceable to the U.S. National Institute of Standards and Technology (NIST). All of the Measurement Standards have been calibrated to their manufacturers' specified accuracy / uncertainty. Evidence of traceability and accuracy is on file at Provo Engineering & Manufacturing Center. An acceptable accuracy ratio between the Standard(s) and the item calibrated has been maintained. This instrument meets or exceeds the manufacturer's published specification unless noted.

This calibration complies with the requirements of ISO 17025 and ANSI Z540. The collective uncertainty of the Measurement Standard used does not exceed 25% of the applicable tolerance for each characteristic calibrated unless otherwise noted.

The results documented in this certificate relate only to the item(s) calibrated or tested. A one year calibration is recommended, however calibration interval assignment and adjustment are the responsibility of the end user. This certificate may not be reproduced, except in full, without the written approval of the issuer.

"As Received" data is the same as shipped data.
Tested with 828-2491

Signed: Ron Harris
Technician: Ron Harris

Provo Engineering and Manufacturing Center, 1681 West 820 North, Provo, Utah 84601
Toll Free: 888.258.3222 Telephone: 716.926.8243 Fax: 716.926.8215
ISO 9001-2000 Certified

PCB PIEZOTRONICS
A PCB GROUP COMPANY

Certificate of Calibration and Conformance

Certificate Number 2010-131844

Instrument Model 820, Serial Number 1470, was calibrated on 19JUL2010. The instrument meets factory specifications per Procedure D0001.8160, ANSI S1.4 1983, IEC 651-Type 1 1979, and IEC 804-Type 1 1985.

Instrument found to be in calibration as received: YES
Date Calibrated: 19JUL2010
Calibration due: 19JUL2012

Calibration Standards Used

MANUFACTURER	MODEL	SERIAL NUMBER	INTERVAL	CAL. DUE	TRACEABILITY NO.
Larson Davis	LDSigGn/2239	0099 / 0104	12 Months	20JAN2011	2010-125871

Reference Standards are traceable to the National Institute of Standards and Technology (NIST)

Calibration Environmental Conditions

Temperature: 24 ° Centigrade

Relative Humidity: 34 %

Affirmations

This Certificate attests that this instrument has been calibrated under the stated conditions with Measurement and Test Equipment (M&TE) Standards traceable to the U.S. National Institute of Standards and Technology (NIST). All of the Measurement Standards have been calibrated to their manufacturers' specified accuracy / uncertainty. Evidence of traceability and accuracy is on file at Provo Engineering & Manufacturing Center. An acceptable accuracy ratio between the Standard(s) and the item calibrated has been maintained. This instrument meets or exceeds the manufacturer's published specification unless noted.

This calibration complies with the requirements of ISO 17025 and ANSI Z540. The collective uncertainty of the Measurement Standard used does not exceed 25% of the applicable tolerance for each characteristic calibrated unless otherwise noted.

The results documented in this certificate relate only to the item(s) calibrated or tested. A one year calibration is recommended, however calibration interval assignment and adjustment are the responsibility of the end user. This certificate may not be reproduced, except in full, without the written approval of the issuer.

"AS RECEIVED" data same as shipped data.
Tested with 828-917

Signed: Ron Harris
Technician: Ron Harris

Provo Engineering and Manufacturing Center, 1681 West 820 North, Provo, Utah 84601
Toll Free: 888.258.3222 Telephone: 716.926.8243 Fax: 716.926.8215
ISO 9001-2000 Certified

Mendota Pool Bypass and Reach 2B Improvements Project

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Appendix 17-B Ambient Noise Level Field Measurement Data Sheets

SAN JOAQUIN RIVER
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FIELD MEASUREMENT DATA SHEET

URS Project Name: Reach 2B San Joaquine River Restoration Job # 18600200.0031

ID

SITE IDENTIFICATION: LT 1 OBSERVER(s): Stan, Ryan
START DATE & TIME: 12/28/11 9:12 END DATE & TIME: 12/29/11 10:02
ADDRESS: 13208 East side dr.
GPS coordinates: N 36°48' ~~23~~ 22.4" W 120°20'59.3

Weather

TEMP: 42 °F HUMIDITY: 40 % R.H. WIND: CALM LIGHT MODERATE VARIABLE
WINDSPEED: 5 MPH DIR: N NE E SE S SW W NW STEADY GUSTY ____ MPH
SKY: CLEAR SUNNY DARK PARTLY CLOUDY OVRCST FOG DRIZZLE RAIN Other: _____

Acoustic Measurements

INSTRUMENT: 820 Blue TYPE: 1 2 SERIAL #: 1768
CALIBRATOR: 200 SERIAL #: 2794
CALIBRATION CHECK: PRE-TEST 94 dBA SPL POST-TEST 94 dBA SPL WINDSCREEN ___
SETTINGS: A-WEIGHTED SLOW FAST FRONTAL RANDOM ANSI OTHER: _____

Rec #	Start Time / End Time	L_{eq}	L_{max}	L_{min}	L_{90}	L_{50}	L_{10}
1	9:12 / 10:02	48.9	82.8	26.5	32.4	38.1	46.8
	/ /						
	/ /						
	/ /						

COMMENTS: mounted to power pole

Source Info and Traffic Counts

PRIMARY NOISE(S): TRAFFIC AIRCRAFT RAIL INDUSTRIAL AMBIENT OTHER
ROADWAY TYPE: East side dr., Paved, 2 Lane Rd., Lots of Potholes

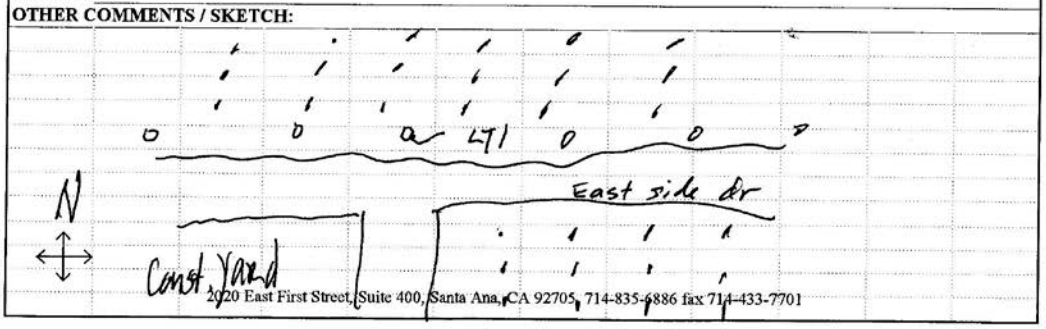
COUNT DURATION: ____-MINUTE	NB / EB / SB / WB	SPEED (mph) NB EB / SB WB	#2 COUNT: NB / EB / SB / WB	SPEED (mph) NB EB / SB WB
AUTOS:	/	/	/	/
MED. TRUCKS:	/	/	/	/
HVY TRUCKS:	/	/	/	/
BUSES:	/	/	/	/
MOTORCYCLES:	/	/	/	/

SPEED ESTIMATED BY: RADAR / DRIVING / OBSERVER

OTHER NOISE SOURCES: distant AIRCRAFT overhead / RUSTLING LEAVES / distant BARKING DOGS / BIRDS
distant CHILDREN PLAYING / distant TRAFFIC / distant LANDSCAPING / distant TRAINS
OTHER: _____

Description / Sketch

TERRAIN: HARD SOFT MIXED FLAT OTHER: _____
PHOTOS: _____
OTHER COMMENTS / SKETCH:



2020 East First Street, Suite 400, Santa Ana, CA 92705, 714-835-6886 fax 714-433-7701

FIELD MEASUREMENT DATA SHEET

URS Project Name: Reach 2B San Joaquine River Restoration Job # 18600200.0031

ID

SITE IDENTIFICATION: LT2 OBSERVER(s): Stan, Ryan
START DATE & TIME: 12/28/11 950 END DATE & TIME: 12/28/11 10:16
ADDRESS: ~~Eastside Dr~~ 2382-2398 N. San Mateo Rd.
GPS coordinates: N 36°46'17.8" W120°18'51.3"

Weather

TEMP: 47 °F HUMIDITY: 63 % R.H. WIND: CALM LIGHT MODERATE VARIABLE
WINDSPEED: 6 MPH DIR: N NE E SE S SW W NW STEADY GUSTY ____ MPH
SKY: CLEAR SUNNY DARK PARTLY CLOUDY OVRCST FOG DRIZZLE RAIN Other: _____

Acoustic Measurements

INSTRUMENT: 820 Green TYPE: 1 2 SERIAL #: 1597
CALIBRATOR: 200 SERIAL #: 2794
CALIBRATION CHECK: PRE-TEST 94 dBA SPL POST-TEST 93.8 dBA SPL WINDSCREEN ✓
SETTINGS: A-WEIGHTED SLOW FAST FRONTAL RANDOM ANSI OTHER: _____

Rec #	Start Time / End Time	L_{eq}	L_{max}	L_{min}	L_{90}	L_{50}	L_{10}	
1	950 / 10:16	55.7	89.9	22.8	27.4	36.3	46	
___	___ / ___	___	___	___	___	___	___	
___	___ / ___	___	___	___	___	___	___	
___	___ / ___	___	___	___	___	___	___	

COMMENTS: mounted to power pole, 5+ dogs from house

Source Info and Traffic Counts

PRIMARY NOISE(S): TRAFFIC AIRCRAFT RAIL INDUSTRIAL AMBIENT OTHER _____
ROADWAY TYPE: San Mateo, dirt/paved / lane rd.

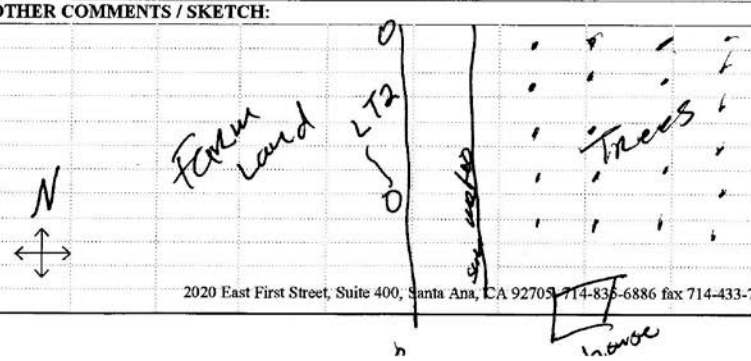
COUNT DURATION: ____-MINUTE	NB / EB / SB / WB	SPEED (mph) NB EB / SB WB	#2 COUNT: NB / EB / SB / WB	SPEED (mph) NB EB / SB WB
AUTOS:	___ / ___	___ / ___	___ / ___	___ / ___
MED. TRUCKS:	___ / ___	___ / ___	___ / ___	___ / ___
HVY TRUCKS:	___ / ___	___ / ___	___ / ___	___ / ___
BUSES:	___ / ___	___ / ___	___ / ___	___ / ___
MOTORCYCLES:	___ / ___	___ / ___	___ / ___	___ / ___

SPEED ESTIMATED BY: RADAR / DRIVING / OBSERVER

OTHER NOISE SOURCES: distant AIRCRAFT overhead / RUSTLING LEAVES / distant BARKING DOGS / BIRDS distant CHILDREN PLAYING / distant TRAFFIC / distant LANDSCAPING / distant TRAINS
OTHER: _____

Description / Sketch

TERRAIN: HARD SOFT MIXED FLAT OTHER: _____
PHOTOS: _____
OTHER COMMENTS / SKETCH:



2020 East First Street, Suite 400, Santa Ana, CA 92705 714-836-6886 fax 714-433-7701

FIELD MEASUREMENT DATA SHEET

URS Project Name: Reach 2B San Joaquine River Restoration Job # 18600200.0031

ID

SITE IDENTIFICATION: LT3 OBSERVER(s): Stan, Ryan
START DATE & TIME: 12/28/11 10:15 END DATE & TIME: 12/28/11 11:06
ADDRESS:
GPS coordinates: N36°47'32.6" W120°22'18.5"

Weather

TEMP: 50.2 F HUMIDITY: 44 % R.H. WIND: CALM LIGHT MODERATE VARIABLE
WINDSPEED: 0-1 MPH DIR: N NE E SE S SW W NW STEADY GUSTY____MPH
SKY: CLEAR SUNNY DARK PARTLY CLOUDY OVRCST FOG DRIZZLE RAIN Other:

Acoustic Measurements

INSTRUMENT: 820 yellow TYPE: 1 2 SERIAL #: 1470
CALIBRATOR: 200 SERIAL #: 2794
CALIBRATION CHECK: PRE-TEST 94 dBA SPL POST-TEST 93.8 dBA SPL WINDSCREEN ✓
SETTINGS: A-WEIGHTED SLOW FAST FRONTAL RANDOM ANSI OTHER:

Rec #	Start Time	End Time									
1	10:15	11:06	L_{eq} 39.2	L_{max} 115	L_{min} 21.2	L_{90} 26.9	L_{50} 32.3	L_{10} 39.9			
/	/	:	L_{eq}	L_{max}	L_{min}	L_{90}	L_{50}	L_{10}			
/	/	:	L_{eq}	L_{max}	L_{min}	L_{90}	L_{50}	L_{10}			
/	/	:	L_{eq}	L_{max}	L_{min}	L_{90}	L_{50}	L_{10}			

COMMENTS: Mounted to dead tree in Creek bed, Barking dogs

Source Info and Traffic Counts

PRIMARY NOISE(S): TRAFFIC AIRCRAFT RAIL INDUSTRIAL AMBIENT OTHER
ROADWAY TYPE: Pavid Rd., Buss Rd, 2 lane Rd.
COUNT DURATION:_____-MINUTE

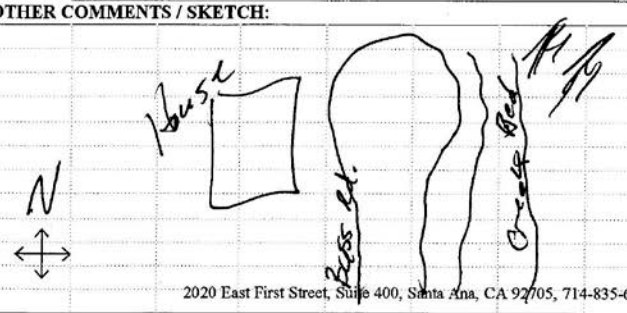
	SPEED (mph) NB / EB / SB / WB	SPEED (mph) NB EB / SB WB	#2 COUNT: NB / EB / SB / WB	SPEED (mph) NB EB / SB WB
AUTOS:	/	/	/	/
MED. TRUCKS:	/	/	/	/
HVY TRUCKS:	/	/	/	/
BUSES:	/	/	/	/
MOTORCYCLES:	/	/	/	/

SPEED ESTIMATED BY: RADAR / DRIVING / OBSERVER

OTHER NOISE SOURCES: distant AIRCRAFT overhead / RUSTLING LEAVES / distant BARKING DOGS / BIRDS
distant CHILDREN PLAYING / distant TRAFFIC / distant LANDSCAPING / distant TRAINS
OTHER:

Description / Sketch

TERRAIN: HARD SOFT MIXED FLAT OTHER:
PHOTOS:
OTHER COMMENTS / SKETCH:



2020 East First Street, Suite 400, Santa Ana, CA 92705, 714-835-6886 fax 714-433-7701

FIELD MEASUREMENT DATA SHEET

URS Project Name: Reach 2B San Joaquine River Restoration Job # 18600200.0031

ID

SITE IDENTIFICATION: ST1 OBSERVER(s): Ryan, Stan
START DATE & TIME: 12/28/11 10:30 END DATE & TIME:
ADDRESS: ~~Park~~ Mendota Pool Park
GPS coordinates: N36° 46' 43.6" W120° 22' 23.7"

Weather

TEMP: 54 °F HUMIDITY: 51.4 % R.H. WIND: CALM LIGHT MODERATE VARIABLE
WINDSPEED: 3.5 MPH DIR: N NE E SE S SW W NW STEADY GUSTY ___ MPH
SKY: CLEAR SUNNY DARK PARTLY CLOUDY OVRCST FOG DRIZZLE RAIN Other: ___

Acoustic Measurements

INSTRUMENT: BK2 250 TYPE: 1 2 SERIAL #: 2672071
CALIBRATOR: 200 SERIAL #: 2794
CALIBRATION CHECK: PRE-TEST 94.1 dBA SPL POST-TEST 94.1 dBA SPL WINDSCREEN X
SETTINGS: A-WEIGHTED SLOW FAST FRONTAL RANDOM ANSI OTHER: ___

	Rec #	Start Time	End Time	L_{eq}	L_{max}	L_{min}	L_{90}	L_{50}	L_{10}
Reach 2B001	1	10:30	12:30						
Reach 2B002	2	20:00	22:00						
Reach 2B003	3	22:00	01:00						

COMMENTS: Mounted to tripod

Source Info and Traffic Counts

PRIMARY NOISE(S): TRAFFIC AIRCRAFT RAIL INDUSTRIAL AMBIENT OTHER
ROADWAY TYPE: Bass Rd., Paved, 2 Lane Road

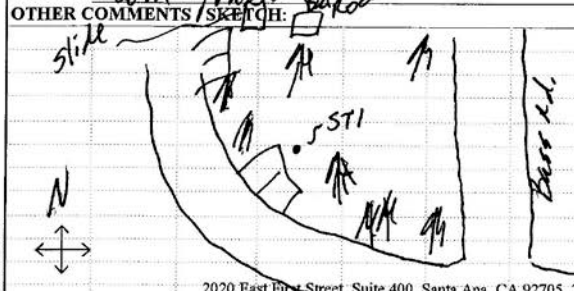
COUNT DURATION: ___-MINUTE	NB / EB / SB / WB	SPEED (mph) NB EB / SB WB	#2 COUNT: NB / EB / SB / WB	SPEED (mph) NB EB / SB WB
AUTOS:	/	/	/	/
MED. TRUCKS:	/	/	/	/
HVY TRUCKS:	/	/	/	/
BUSES:	/	/	/	/
MOTORCYCLES:	/	/	/	/

SPEED ESTIMATED BY: RADAR / DRIVING / OBSERVER

OTHER NOISE SOURCES: distant AIRCRAFT overhead / RUSTLING LEAVES / distant BARKING DOGS / BIRDS
distant CHILDREN PLAYING / distant TRAFFIC / distant LANDSCAPING / distant TRAINS
OTHER:

Description / Sketch

TERRAIN: HARD SOFT MIXED FLAT OTHER:
PHOTOS: dead grass
OTHER COMMENTS / SKETCH: Bath Room



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Mendota Pool Bypass and Reach 2B Improvements Project

Final
Environmental Impact Statement/Report

Appendix 17-C Noise Levels and Contour Distances per Scheduled Construction Activity

SAN JOAQUIN RIVER
RESTORATION PROGRAM

Final
July 2016

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Table C-1: Noise Levels for each Scheduled Construction Activity to the 45 and 50 dBA SPL Contours (feet)

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
2	1	GROUP 1	Levee Construction							
2	2	GROUP 1	Levee Construction	Levee Preparation						
2	3	GROUP 1	Levee Construction	Levee Preparation	Clearing & Grubbing			87	6,126	3,445
2	4	GROUP 1	Levee Construction	Levee Preparation	Tree Removal			87	6,126	3,445
2	5	GROUP 1	Levee Construction	Right Setback Levee						
2	6	GROUP 1	Levee Construction	Right Setback Levee	Compacted Embankment			88	6,698	3,766
2	7	GROUP 1	Levee Construction	Right Setback Levee	Slurry Wall (88 Percent Of Total Levee Length)			87	6,126	3,445
2	8	GROUP 1	Levee Construction	Right Setback Levee	USACE Trench Foundation			88	6,698	3,766
2	9	GROUP 1	Levee Construction	Right Setback Levee	Borrow Excavation (< 1 Mile)			88	6,698	3,766
2	10	GROUP 1	Levee Construction	Left Setback Levee						
2	11	GROUP 1	Levee Construction	Left Setback Levee	Compacted Embankment			88	6,698	3,766
2	12	GROUP 1	Levee Construction	Left Setback Levee	Slurry Wall (88 Percent Of Total Levee Length)			87	6,126	3,445
2	13	GROUP 1	Levee Construction	Left Setback Levee	USACE Trench Foundation			88	6,698	3,766
2	14	GROUP 1	Levee Construction	Left Setback Levee	Borrow Excavation (< 1 Mile)			88	6,698	3,766
2	15	GROUP 1	Levee Construction	General						
2	16	GROUP 1	Levee Construction	General	Seeding (Levee Slopes)			88	6,698	3,766
2	17	GROUP 1	Levee Construction	General	Ramps & Turnabouts			88	6,698	3,766
2	18	GROUP 1	Levee Construction	General	Right Levee Aggregate Base Roadway			88	6,698	3,766
2	19	GROUP 1	Levee Construction	General	Left Levee Aggregate Base Roadway			88	7,063	3,972
2	20	GROUP 1	Levee Construction	General	Haul Excess Material By Truck <20 Miles (Drainage Channel)			88	6,698	3,766
2	21	GROUP 1	Levee Construction	General	Mobilization			80	2,963	1,666
2	46	GROUP 2	Levee Removal							
2	47	GROUP 2	Levee Removal	Haul Excess Material By Truck <20 Miles (Levee Removal)				88	6,698	3,766
2	48	GROUP 2	Levee Removal	Mobilization				80	2,963	1,666
2	136	GROUP 3	Chowchilla Bifurcation Structure							

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
2	137	GROUP 3	Chowchilla Bifurcation Structure	Fish Ladder With Supplemental Flow - Right Bank						
2	138	GROUP 3	Chowchilla Bifurcation Structure	Fish Ladder With Supplemental Flow - Right Bank	Fish Ladder Preparation					
2	139	GROUP 3	Chowchilla Bifurcation Structure	Fish Ladder With Supplemental Flow - Right Bank	Fish Ladder Preparation	Clearing & Grubbing		87	6,126	3,445
2	140	GROUP 3	Chowchilla Bifurcation Structure	Fish Ladder With Supplemental Flow - Right Bank	Fish Ladder Preparation	Cofferdam		103	38,638	21,728
2	141	GROUP 3	Chowchilla Bifurcation Structure	Fish Ladder With Supplemental Flow - Right Bank	Fish Ladder Preparation	Cofferdam Removal		103	38,638	21,728
2	142	GROUP 3	Chowchilla Bifurcation Structure	Fish Ladder With Supplemental Flow - Right Bank	Fish Ladder Preparation	Cut-Off Wall (Sheet Piles)		103	38,638	21,728
2	143	GROUP 3	Chowchilla Bifurcation Structure	Fish Ladder With Supplemental Flow - Right Bank	Fish Ladder Preparation	Dewatering		83	4,029	2,266
2	144	GROUP 3	Chowchilla Bifurcation Structure	Fish Ladder With Supplemental Flow - Right Bank	Fish Ladder Preparation	Excavation To Stockpile		88	6,698	3,766
2	145	GROUP 3	Chowchilla Bifurcation Structure	Fish Ladder With Supplemental Flow - Right Bank	Fish Ladder Preparation	Excavation To Disposal Off Site		88	6,698	3,766
2	146	GROUP 3	Chowchilla Bifurcation Structure	Fish Ladder With Supplemental Flow - Right Bank	Fish Ladder Preparation	Concrete Foundation		83	4,029	2,266
2	147	GROUP 3	Chowchilla Bifurcation Structure	Fish Ladder With Supplemental Flow - Right Bank	Fish Ladder & Supplemental Intake Structure					
2	148	GROUP 3	Chowchilla Bifurcation Structure	Fish Ladder With Supplemental Flow - Right Bank	Fish Ladder & Supplemental Intake Structure	Concrete		83	4,029	2,266
2	149	GROUP 3	Chowchilla Bifurcation Structure	Fish Ladder With Supplemental Flow - Right Bank	Fish Ladder & Supplemental Intake Structure	Reinforcing Steel		83	4,029	2,266
2	150	GROUP 3	Chowchilla Bifurcation Structure	Fish Ladder With Supplemental Flow - Right Bank	Fish Ladder & Supplemental Intake Structure	Steel Grating		83	4,029	2,266
2	151	GROUP 3	Chowchilla Bifurcation Structure	Fish Ladder With Supplemental Flow - Right Bank	Fish Ladder & Supplemental Intake Structure	Steel Slide Compression Gate		83	4,029	2,266
2	152	GROUP 3	Chowchilla Bifurcation Structure	Fish Ladder With Supplemental Flow - Right Bank	Fish Ladder & Supplemental Intake Structure	Adjustable Steel Slot Weir		83	4,029	2,266
2	153	GROUP 3	Chowchilla Bifurcation Structure	Fish Ladder With Supplemental Flow - Right Bank	Fish Ladder & Supplemental Intake Structure	Steel Slide Compression Gate For Pipe Diversion		83	4,029	2,266

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
2	154	GROUP 3	Chowchilla Bifurcation Structure	Fish Ladder With Supplemental Flow - Right Bank	Fish Ladder & Supplemental Intake Structure	Steel Slide Compression Gate For Supplemental Flow Pipe		83	4,029	2,266
2	155	GROUP 3	Chowchilla Bifurcation Structure	Fish Ladder With Supplemental Flow - Right Bank	Fish Ladder & Supplemental Intake Structure	Fish Screen		83	4,029	2,266
2	156	GROUP 3	Chowchilla Bifurcation Structure	Fish Ladder With Supplemental Flow - Right Bank	Fish Ladder & Supplemental Intake Structure	Trash Rack		83	4,029	2,266
2	157	GROUP 3	Chowchilla Bifurcation Structure	Fish Ladder With Supplemental Flow - Right Bank	Fish Ladder & Supplemental Intake Structure	Automated Trash Rack Screen Cleaner		83	4,029	2,266
2	158	GROUP 3	Chowchilla Bifurcation Structure	Fish Ladder With Supplemental Flow - Right Bank	Fish Ladder & Supplemental Intake Structure	Steel Slide Gate Operator Control		83	4,029	2,266
2	159	GROUP 3	Chowchilla Bifurcation Structure	Fish Ladder With Supplemental Flow - Right Bank	Fish Ladder & Supplemental Intake Structure	60" Steel Pipe		83	4,029	2,266
2	160	GROUP 3	Chowchilla Bifurcation Structure	Fish Ladder With Supplemental Flow - Right Bank	Fish Ladder & Supplemental Intake Structure	84" Steel Pipe (Two @ 270 LF EA)		84	4,462	2,509
2	161	GROUP 3	Chowchilla Bifurcation Structure	Fish Ladder With Supplemental Flow - Right Bank	Pipe Installation Beneath River					
2	162	GROUP 3	Chowchilla Bifurcation Structure	Fish Ladder With Supplemental Flow - Right Bank	Pipe Installation Beneath River	Excavate & Fill Bore Pit (30' x 30' x 22' Deep)		83	4,029	2,266
2	163	GROUP 3	Chowchilla Bifurcation Structure	Fish Ladder With Supplemental Flow - Right Bank	Pipe Installation Beneath River	Bore & Jack (Dual 114" Steel Casing Pipes - 250 LF EA)		86	5,460	3,070
2	164	GROUP 3	Chowchilla Bifurcation Structure	Fish Ladder With Supplemental Flow - Right Bank	Pipe Installation Beneath River	84" Steel Carrier Pipe (Two @ 260 LF EA)		84	4,462	2,509
2	165	GROUP 3	Chowchilla Bifurcation Structure	Fish Ladder With Supplemental Flow - Right Bank	Pipe Installation Beneath River	Excavate & Fill Receiving pit (30' x 30' x 22' Deep)		83	4,029	2,266
2	166	GROUP 3	Chowchilla Bifurcation Structure	Fish Ladder With Supplemental Flow - Right Bank	Pipe Installation Beneath River	Pressure Grout Annular Space		82	3,619	2,035
2	167	GROUP 3	Chowchilla Bifurcation Structure	Fish Ladder With Supplemental Flow - Right Bank	Pipe Installation Beneath River	Mobilization		80	2,963	1,666
2	107	GROUP 4	San Mateo Retrofit							
2	108	GROUP 4	San Mateo Retrofit	Site Preparation & Construction						
2	109	GROUP 4	San Mateo Retrofit	Site Preparation & Construction	Tree Removal			87	6,126	3,445
2	110	GROUP 4	San Mateo Retrofit	Site Preparation & Construction	Clearing & Grubbing			87	6,126	3,445
2	111	GROUP 4	San Mateo Retrofit	Site Preparation & Construction	Demolition (Existing Culvert)			87	6,126	3,445

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
2	112	GROUP 4	San Mateo Retrofit	Site Preparation & Construction	Concrete Box Culverts (5.9' x 24' @ 26' EA)			88	6,698	3,766
2	113	GROUP 4	San Mateo Retrofit	Site Preparation & Construction	Structure Concrete			83	4,029	2,266
2	114	GROUP 4	San Mateo Retrofit	Site Preparation & Construction	Riprap Approaches - Labor			83	4,029	2,266
2	115	GROUP 4	San Mateo Retrofit	Site Preparation & Construction	Site Excavation			88	6,698	3,766
2	116	GROUP 4	San Mateo Retrofit	Site Preparation & Construction	Site Fill			88	6,698	3,766
2	117	GROUP 4	San Mateo Retrofit	Site Preparation & Construction	Embankment Earthwork Fill			88	6,698	3,766
2	118	GROUP 4	San Mateo Retrofit	Site Preparation & Construction	Access Gates			83	4,029	2,266
2	119	GROUP 4	San Mateo Retrofit	Site Preparation & Construction	Dust Control			79	2,376	1,336
2	120	GROUP 4	San Mateo Retrofit	Site Preparation & Construction	SWPPP (Storm Water Permit) Report Preparation			82	3,529	1,984
2	121	GROUP 4	San Mateo Retrofit	Site Preparation & Construction	Worker Protection			100	27,367	15,390
2	122	GROUP 4	San Mateo Retrofit	Temporary Bypass Channel						
2	123	GROUP 4	San Mateo Retrofit	Temporary Bypass Channel	Coffer Dams			100	27,503	15,466
2	124	GROUP 4	San Mateo Retrofit	Temporary Bypass Channel	Dewatering (Upstream & Downstream)			86	5,593	3,145
2	125	GROUP 4	San Mateo Retrofit	Temporary Bypass Channel	Channel Excavation			88	6,698	3,766
2	126	GROUP 4	San Mateo Retrofit	Temporary Bypass Channel	Railcar Bridge (Including Labor)			85	5,113	2,875
2	127	GROUP 4	San Mateo Retrofit	Temporary Bypass Channel	Mobilization			82	3,529	1,984
2	128	GROUP 5	Lone Willow Slough Fish Screen							
2	129	GROUP 5	Lone Willow Slough Fish Screen	Fish Screen Structure						
2	130	GROUP 5	Lone Willow Slough Fish Screen	Fish Screen Structure	Concrete			83	4,029	2,266
2	131	GROUP 5	Lone Willow Slough Fish Screen	Fish Screen Structure	Reinforcing Steel			83	4,029	2,266
2	132	GROUP 5	Lone Willow Slough Fish Screen	Fish Screen Structure	Fish Screen			83	4,029	2,266
2	133	GROUP 5	Lone Willow Slough Fish Screen	Fish Screen Structure	Trash Rack			83	4,029	2,266
2	134	GROUP 5	Lone Willow Slough Fish Screen	Fish Screen Structure	Automated Trash Rack Screen Cleaner			82	3,544	1,993
2	135	GROUP 5	Lone Willow Slough Fish Screen	Fish Screen Structure	Mobilization			85	5,244	2,949
2	74	GROUP 6	Relocation/Modifications							

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
2	75	GROUP 6	Relocation/Modifications	Canal						
2	76	GROUP 6	Relocation/Modifications	Canal	Canal Relocations			85	5,113	2,875
2	77	GROUP 6	Relocation/Modifications	Canal	Mobilization			82	3,529	1,984
2	78	GROUP 6	Relocation/Modifications	Utilities						
2	79	GROUP 6	Relocation/Modifications	Utilities	Overhead Electrical Distribution Removal & Replacement			82	3,544	1,993
2	80	GROUP 6	Relocation/Modifications	Utilities	Mobilization			85	5,244	2,949
2	81	GROUP 6	Relocation/Modifications	Pump Station (quantities below reflect 5 pump stations each location)						
2	82	GROUP 6	Relocation/Modifications	Pump Station (quantities below reflect 5 pump stations each location)	Site Preparation					
2	83	GROUP 6	Relocation/Modifications	Pump Station (quantities below reflect 5 pump stations each location)	Site Preparation	Clearing & Grubbing		87	6,126	3,445
2	84	GROUP 6	Relocation/Modifications	Pump Station (quantities below reflect 5 pump stations each location)	Site Preparation	Canal/Drain Relocation		86	5,460	3,070
2	85	GROUP 6	Relocation/Modifications	Pump Station (quantities below reflect 5 pump stations each location)	Site Preparation	Concrete Lining (Intake & Outfall)		83	4,029	2,266
2	86	GROUP 6	Relocation/Modifications	Pump Station (quantities below reflect 5 pump stations each location)	Site Preparation	Rock Riprap At Outfall		83	4,029	2,266
2	87	GROUP 6	Relocation/Modifications	Pump Station (quantities below reflect 5 pump stations each location)	Site Preparation	Pump & Sump Relocation		82	3,544	1,993
2	88	GROUP 6	Relocation/Modifications	Pump Station (quantities below reflect 5 pump stations each location)	Site Preparation	Replace Electrical Panel		81	3,070	1,727
2	89	GROUP 6	Relocation/Modifications	Pump Station (quantities below reflect 5 pump stations each location)	Site Preparation	PG&E Electrical Service		82	3,619	2,035
2	90	GROUP 6	Relocation/Modifications	Pump Station (quantities below reflect 5 pump stations each location)	Site Preparation	12"Steel Pipe		81	3,070	1,727
2	91	GROUP 6	Relocation/Modifications	Pump Station (quantities below reflect 5 pump stations	Site Preparation	Dust Control		82	3,529	1,984

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
				each location)						
2	92	GROUP 6	Relocation/Modifications	Pump Station (quantities below reflect 5 pump stations each location)	Site Preparation	Worker Protection		80	2,963	1,666
2	93	GROUP 6	Relocation/Modifications	Pump Station (quantities below reflect 5 pump stations each location)	Site Preparation	Mobilization		85	5,244	2,949
2	94	GROUP 6	Relocation/Modifications	Deep Well Floodproofing (quantities below reflect 19 wells each location)						
2	95	GROUP 6	Relocation/Modifications	Deep Well Floodproofing (quantities below reflect 19 wells each location)	Site Preparation & Construction					
2	96	GROUP 6	Relocation/Modifications	Deep Well Floodproofing (quantities below reflect 19 wells each location)	Site Preparation & Construction	Clearing & Grubbing		87	6,126	3,445
2	97	GROUP 6	Relocation/Modifications	Deep Well Floodproofing (quantities below reflect 19 wells each location)	Site Preparation & Construction	Earthwork (Using Loader & Truck)		88	6,698	3,766
2	98	GROUP 6	Relocation/Modifications	Deep Well Floodproofing (quantities below reflect 19 wells each location)	Site Preparation & Construction	Revegetation		86	5,460	3,070
2	99	GROUP 6	Relocation/Modifications	Deep Well Floodproofing (quantities below reflect 19 wells each location)	Site Preparation & Construction	Pull Pump & Column & Reinstall After Modifications		83	4,029	2,266
2	100	GROUP 6	Relocation/Modifications	Deep Well Floodproofing (quantities below reflect 19 wells each location)	Site Preparation & Construction	Column Extension		83	4,029	2,266
2	101	GROUP 6	Relocation/Modifications	Deep Well Floodproofing (quantities below reflect 19 wells each location)	Site Preparation & Construction	Casing Extension		83	4,029	2,266
2	102	GROUP 6	Relocation/Modifications	Deep Well Floodproofing (quantities below reflect 19 wells each location)	Site Preparation & Construction	Discharge Piping Modifications		82	3,544	1,993

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
2	103	GROUP 6	Relocation/Modifications	Deep Well Floodproofing (quantities below reflect 19 wells each location)	Site Preparation & Construction	Replace Electrical Panel		79	2,509	1,411
2	105	GROUP 6	Relocation/Modifications	Deep Well Floodproofing (quantities below reflect 19 wells each location)	Site Preparation & Construction	Dust Control		80	2,963	1,666
2	106	GROUP 6	Relocation/Modifications	Deep Well Floodproofing (quantities below reflect 19 wells each location)	Site Preparation & Construction	Mobilization		85	5,244	2,949
2	22	GROUP 7	Bend 10 Revetment							
2	23	GROUP 7	Bend 10 Revetment	Site Preparation						
2	24	GROUP 7	Bend 10 Revetment	Site Preparation	Clearing & Grubbing (Levee Preparation)			87	6,126	3,445
2	25	GROUP 7	Bend 10 Revetment	Right Setback Levee (Bend 10 Only)						
2	26	GROUP 7	Bend 10 Revetment	Right Setback Levee (Bend 10 Only)	Compacted Embankment			88	6,698	3,766
2	27	GROUP 7	Bend 10 Revetment	Right Setback Levee (Bend 10 Only)	Slurry Wall (100 Percent Of Total Levee Length)			87	6,126	3,445
2	28	GROUP 7	Bend 10 Revetment	Right Setback Levee (Bend 10 Only)	USACE Trench Foundation			88	6,698	3,766
2	29	GROUP 7	Bend 10 Revetment	Right Setback Levee (Bend 10 Only)	Borrow Excavation (< 1 Mile)			88	6,698	3,766
2	30	GROUP 7	Bend 10 Revetment	General						
2	31	GROUP 7	Bend 10 Revetment	General	Seeding (Levee Slopes)			88	6,698	3,766
2	32	GROUP 7	Bend 10 Revetment	General	Ramps & Turnabouts			88	6,698	3,766
2	33	GROUP 7	Bend 10 Revetment	General	Right Levee Aggregate Base Roadway			88	6,698	3,766
2	34	GROUP 7	Bend 10 Revetment	Revetment (Bend 10) Per Linear Foot						
2	44	GROUP 7	Bend 10 Revetment	Revetment (Bend 10) Per Linear Foot	Revetment (Bend 10) Subtotal Per Linear Foot (Subtotal 35 To 43)			84	4,337	2,439
2	45	GROUP 7	Bend 10 Revetment	Revetment (Bend 10) Per Linear Foot	Mobilization			80	2,963	1,666
2	49	GROUP 8	Vegetation & Irrigation							
2	50	GROUP 8	Vegetation & Irrigation	General Description						
2	51	GROUP 8	Vegetation & Irrigation	General Description	Plant Establishment (12 Months)			81	3,070	1,727
2	52	GROUP 8	Vegetation & Irrigation	General Description	Landscape Maintenance (12 Months Or As Needed)			86	5,305	2,983

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
2	53	GROUP 8	Vegetation & Irrigation	General Description	Agricultural Topsoil (6" Layer)			85	5,113	2,875
2	54	GROUP 8	Vegetation & Irrigation	General Description	Erosion Control Fabric			80	2,963	1,666
2	55	GROUP 8	Vegetation & Irrigation	General Description	Irrigation System			81	3,070	1,727
2	56	GROUP 8	Vegetation & Irrigation	General Description	Beaver Fence			85	5,244	2,949
2	57	GROUP 8	Vegetation & Irrigation	General Description	Seeding			85	5,113	2,875
2	58	GROUP 8	Vegetation & Irrigation	General Description	Pole Cuttings			80	2,963	1,666
2	59	GROUP 8	Vegetation & Irrigation	General Description	Fascine Bundle			80	2,963	1,666
2	60	GROUP 8	Vegetation & Irrigation	General Description	Instream Woody Material			80	2,963	1,666
2	61	GROUP 8	Vegetation & Irrigation	General Description	Treepot Installation T8 - Fcf			81	3,070	1,727
2	62	GROUP 8	Vegetation & Irrigation	General Description	Treepot Installation T8 - Oag			81	3,070	1,727
2	63	GROUP 8	Vegetation & Irrigation	General Description	Treepot Installation T4 - Bbt			81	3,070	1,727
2	64	GROUP 8	Vegetation & Irrigation	General Description	Treepot Installation T4 - Cbm			81	3,070	1,727
2	65	GROUP 8	Vegetation & Irrigation	General Description	Treepot Installation DP - Cmb			81	3,070	1,727
2	66	GROUP 8	Vegetation & Irrigation	General Description	Treepot Installation DP - Crg			81	3,070	1,727
2	67	GROUP 8	Vegetation & Irrigation	General Description	Treepot Installation DP - Rbh			81	3,070	1,727
2	68	GROUP 8	Vegetation & Irrigation	General Description	Treepot Installation DP - Sgf			81	3,070	1,727
2	69	GROUP 8	Vegetation & Irrigation	General Description	Treepot Installation DP - Fcf			81	3,070	1,727
2	70	GROUP 8	Vegetation & Irrigation	General Description	Treepot Installation DP - Oag			81	3,070	1,727
2	71	GROUP 8	Vegetation & Irrigation	General Description	Treepot Installation D6 - Swt			81	3,070	1,727
2	72	GROUP 8	Vegetation & Irrigation	General Description	Treepot Installation D6 - Bwt			81	3,070	1,727
2	73	GROUP 8	Vegetation & Irrigation	General Description	Mobilization			75	1,581	889
4	1	Group 1	Levee Construction							
4	2	Group 1	Levee Construction	Levee Preparation						
4	3	Group 1	Levee Construction	Levee Preparation	Clearing & Grubbing			87	6,126	3,445
4	4	Group 1	Levee Construction	Levee Preparation	Tree Removal			87	6,126	3,445
4	5	Group 1	Levee Construction	Right Setback Levee						
4	6	Group 1	Levee Construction	Right Setback Levee	Compacted Embankment			88	6,698	3,766

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
4	7	Group 1	Levee Construction	Right Setback Levee	Slurry Wall (76 Percent Of Total Levee Length)			87	6,126	3,445
4	8	Group 1	Levee Construction	Right Setback Levee	USACE Trench Foundation			88	6,698	3,766
4	9	Group 1	Levee Construction	Right Setback Levee	Borrow Excavation (< 1 Mile)			88	6,698	3,766
4	10	Group 1	Levee Construction	Left Setback Levee						
4	11	Group 1	Levee Construction	Left Setback Levee	Compacted Embankment			88	6,698	3,766
4	12	Group 1	Levee Construction	Left Setback Levee	Slurry Wall (76 Percent Of Total Levee Length)			87	6,126	3,445
4	13	Group 1	Levee Construction	Left Setback Levee	USACE Trench Foundation			88	6,698	3,766
4	14	Group 1	Levee Construction	Left Setback Levee	Borrow Excavation (< 1 Mile)			88	6,698	3,766
4	15	Group 1	Levee Construction	General						
4	16	Group 1	Levee Construction	General	Seeding (Levee Slopes)			88	6,698	3,766
4	17	Group 1	Levee Construction	General	Ramps & Turnabouts					
4	18	Group 1	Levee Construction	General	Right Levee Aggregate Base Roadway			88	6,698	3,766
4	19	Group 1	Levee Construction	General	Left Levee Aggregate Base Roadway			88	6,698	3,766
4	20	Group 1	Levee Construction	General	Haul Excess Material By Truck <20 Miles (Drainage Channel)			88	6,698	3,766
4	21	Group 1	Levee Construction	General	Mobilization			80	2,963	1,666
4	46	Group 2	Levee Removal							
4	47	Group 2	Levee Removal	Haul Excess Material By Truck <20 Miles (Levee Removal)				88	6,698	3,766
4	48	Group 2	Levee Removal	Mobilization				80	2,963	1,666
4	136	Group 3	Chowchilla Bifurcation Structure							
4	137	Group 3	Chowchilla Bifurcation Structure	Fish Ladder With Supplemental Flow - Right Bank						
4	138	Group 3	Chowchilla Bifurcation Structure	Fish Ladder With Supplemental Flow - Right Bank	Fish Ladder Preparation					
4	139	Group 3	Chowchilla Bifurcation Structure	Fish Ladder With Supplemental Flow - Right Bank	Fish Ladder Preparation	Clearing & Grubbing		87	6,126	3,445
4	140	Group 3	Chowchilla Bifurcation Structure	Fish Ladder With Supplemental Flow - Right Bank	Fish Ladder Preparation	Cofferdam		103	38,638	21,728

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
4	141	Group 3	Chowchilla Bifurcation Structure	Fish Ladder With Supplemental Flow - Right Bank	Fish Ladder Preparation	Cofferdam Removal		103	38,638	21,728
4	142	Group 3	Chowchilla Bifurcation Structure	Fish Ladder With Supplemental Flow - Right Bank	Fish Ladder Preparation	Cut-Off Wall (Sheet Piles)		103	38,638	21,728
4	143	Group 3	Chowchilla Bifurcation Structure	Fish Ladder With Supplemental Flow - Right Bank	Fish Ladder Preparation	Dewatering		83	4,029	2,266
4	144	Group 3	Chowchilla Bifurcation Structure	Fish Ladder With Supplemental Flow - Right Bank	Fish Ladder Preparation	Excavation To Stockpile		88	6,698	3,766
4	145	Group 3	Chowchilla Bifurcation Structure	Fish Ladder With Supplemental Flow - Right Bank	Fish Ladder Preparation	Excavation To Disposal Off Site		88	6,698	3,766
4	146	Group 3	Chowchilla Bifurcation Structure	Fish Ladder With Supplemental Flow - Right Bank	Fish Ladder Preparation	Concrete Foundation		83	4,029	2,266
4	147	Group 3	Chowchilla Bifurcation Structure	Fish Ladder With Supplemental Flow - Right Bank	Fish Ladder & Supplemental Intake Structure					
4	148	Group 3	Chowchilla Bifurcation Structure	Fish Ladder With Supplemental Flow - Right Bank	Fish Ladder & Supplemental Intake Structure	Concrete		83	4,029	2,266
4	149	Group 3	Chowchilla Bifurcation Structure	Fish Ladder With Supplemental Flow - Right Bank	Fish Ladder & Supplemental Intake Structure	Reinforcing Steel		83	4,029	2,266
4	150	Group 3	Chowchilla Bifurcation Structure	Fish Ladder With Supplemental Flow - Right Bank	Fish Ladder & Supplemental Intake Structure	Steel Grating		83	4,029	2,266
4	151	Group 3	Chowchilla Bifurcation Structure	Fish Ladder With Supplemental Flow - Right Bank	Fish Ladder & Supplemental Intake Structure	Steel Slide Compression Gate		83	4,029	2,266
4	152	Group 3	Chowchilla Bifurcation Structure	Fish Ladder With Supplemental Flow - Right Bank	Fish Ladder & Supplemental Intake Structure	Adjustable Steel Slot Weir		83	4,029	2,266
4	153	Group 3	Chowchilla Bifurcation Structure	Fish Ladder With Supplemental Flow - Right Bank	Fish Ladder & Supplemental Intake Structure	Steel Slide Compression Gate For Pipe Diversion		83	4,029	2,266
4	154	Group 3	Chowchilla Bifurcation Structure	Fish Ladder With Supplemental Flow - Right Bank	Fish Ladder & Supplemental Intake Structure	Steel Slide Compression Gate For Supplemental Flow Pipe		83	4,029	2,266
4	155	Group 3	Chowchilla Bifurcation Structure	Fish Ladder With Supplemental Flow - Right Bank	Fish Ladder & Supplemental Intake Structure	Fish Screen		83	4,029	2,266
4	156	Group 3	Chowchilla Bifurcation Structure	Fish Ladder With Supplemental Flow - Right Bank	Fish Ladder & Supplemental Intake Structure	Trash Rack		83	4,029	2,266
4	157	Group 3	Chowchilla Bifurcation Structure	Fish Ladder With Supplemental Flow - Right Bank	Fish Ladder & Supplemental Intake Structure	Automated Trash Rack Screen Cleaner		83	4,029	2,266

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
4	158	Group 3	Chowchilla Bifurcation Structure	Fish Ladder With Supplemental Flow - Right Bank	Fish Ladder & Supplemental Intake Structure	Steel Slide Gate Operator Control		83	4,029	2,266
4	159	Group 3	Chowchilla Bifurcation Structure	Fish Ladder With Supplemental Flow - Right Bank	Fish Ladder & Supplemental Intake Structure	60" Steel Pipe		83	4,029	2,266
4	160	Group 3	Chowchilla Bifurcation Structure	Fish Ladder With Supplemental Flow - Right Bank	Fish Ladder & Supplemental Intake Structure	84" Steel Pipe (Two @ 270 LF EA)		84	4,462	2,509
4	161	Group 3	Chowchilla Bifurcation Structure	Fish Ladder With Supplemental Flow - Right Bank	Pipe Installation Beneath River					
4	162	Group 3	Chowchilla Bifurcation Structure	Fish Ladder With Supplemental Flow - Right Bank	Pipe Installation Beneath River	Excavate & Fill Bore Pit (30' x 30' x 22' Deep)		83	4,029	2,266
4	163	Group 3	Chowchilla Bifurcation Structure	Fish Ladder With Supplemental Flow - Right Bank	Pipe Installation Beneath River	Bore & Jack (Dual 114" Steel Casing Pipes - 250 LF EA)		86	5,460	3,070
4	164	Group 3	Chowchilla Bifurcation Structure	Fish Ladder With Supplemental Flow - Right Bank	Pipe Installation Beneath River	84" Steel Carrier Pipe (Two @ 260 LF EA)		84	4,462	2,509
4	165	Group 3	Chowchilla Bifurcation Structure	Fish Ladder With Supplemental Flow - Right Bank	Pipe Installation Beneath River	Excavate & Fill Receiving pit (30' x 30' x 22' Deep)		83	4,029	2,266
4	166	Group 3	Chowchilla Bifurcation Structure	Fish Ladder With Supplemental Flow - Right Bank	Pipe Installation Beneath River	Pressure Grout Annular Space		82	3,619	2,035
4	167	Group 3	Chowchilla Bifurcation Structure	Fish Ladder With Supplemental Flow - Right Bank	Pipe Installation Beneath River	Mobilization		80	2,963	1,666
4	107	Group 4	San Mateo Retrofit							
4	108	Group 4	San Mateo Retrofit	Site Preparation & Construction						
4	109	Group 4	San Mateo Retrofit	Site Preparation & Construction	Tree Removal			87	6,126	3,445
4	110	Group 4	San Mateo Retrofit	Site Preparation & Construction	Clearing & Grubbing			87	6,126	3,445
4	111	Group 4	San Mateo Retrofit	Site Preparation & Construction	Demolition (Existing Culvert)			87	6,126	3,445
4	112	Group 4	San Mateo Retrofit	Site Preparation & Construction	Concrete Box Culverts (5.9' x 24' @ 26' EA)			88	6,698	3,766
4	113	Group 4	San Mateo Retrofit	Site Preparation & Construction	Structure Concrete			83	4,029	2,266
4	114	Group 4	San Mateo Retrofit	Site Preparation & Construction	Riprap Approaches - Labor			83	4,029	2,266
4	115	Group 4	San Mateo Retrofit	Site Preparation & Construction	Site Excavation			88	6,698	3,766
4	116	Group 4	San Mateo Retrofit	Site Preparation & Construction	Site Fill			88	6,698	3,766

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
4	117	Group 4	San Mateo Retrofit	Site Preparation & Construction	Embankment Earthwork Fill			88	6,698	3,766
4	118	Group 4	San Mateo Retrofit	Site Preparation & Construction	Access Gates			83	4,029	2,266
4	119	Group 4	San Mateo Retrofit	Site Preparation & Construction	Dust Control			79	2,376	1,336
4	120	Group 4	San Mateo Retrofit	Site Preparation & Construction	SWPPP (Storm Water Permit) Report Preparation			75	1,581	889
4	121	Group 4	San Mateo Retrofit	Site Preparation & Construction	Worker Protection			82	3,529	1,984
4	122	Group 4	San Mateo Retrofit	Temporary Bypass Channel						
4	123	Group 4	San Mateo Retrofit	Temporary Bypass Channel	Coffer Dams			103	38,638	21,728
4	124	Group 4	San Mateo Retrofit	Temporary Bypass Channel	Dewatering (Upstream & Downstream)			83	4,029	2,266
4	125	Group 4	San Mateo Retrofit	Temporary Bypass Channel	Channel Excavation			88	6,698	3,766
4	126	Group 4	San Mateo Retrofit	Temporary Bypass Channel	Railcar Bridge (Including Labor)			88	6,698	3,766
4	127	Group 4	San Mateo Retrofit	Temporary Bypass Channel	Mobilization			80	2,963	1,666
4	128	Group 5	Lone Willow Slough Fish Screen							
4	129	Group 5	Lone Willow Slough Fish Screen	Fish Screen Structure						
4	130	Group 5	Lone Willow Slough Fish Screen	Fish Screen Structure	Concrete			83	4,029	2,266
4	131	Group 5	Lone Willow Slough Fish Screen	Fish Screen Structure	Reinforcing Steel			83	4,029	2,266
4	132	Group 5	Lone Willow Slough Fish Screen	Fish Screen Structure	Fish Screen			83	4,029	2,266
4	133	Group 5	Lone Willow Slough Fish Screen	Fish Screen Structure	Trash Rack			83	4,029	2,266
4	134	Group 5	Lone Willow Slough Fish Screen	Fish Screen Structure	Automated Trash Rack Screen Cleaner			83	4,029	2,266
4	135	Group 5	Lone Willow Slough Fish Screen	Fish Screen Structure	Mobilization			80	2,963	1,666
4	74	Group 6	Relocation/Modifications							
4	75	Group 6	Relocation/Modifications	Canal						
4	76	Group 6	Relocation/Modifications	Canal	Canal Relocations			88	6,698	3,766
4	77	Group 6	Relocation/Modifications	Canal	Mobilization			80	2,963	1,666
4	78	Group 6	Relocation/Modifications	Utilities						

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
4	79	Group 6	Relocation/Modifications	Utilities	Overhead Electrical Distribution Removal & Replacement			83	4,029	2,266
4	80	Group 6	Relocation/Modifications	Utilities	Mobilization			80	2,963	1,666
4	81	Group 6	Relocation/Modifications	Pump Station (Quantities Reflect 6 Pump Stations)						
4	82	Group 6	Relocation/Modifications	Pump Station (Quantities Reflect 6 Pump Stations)	Site Preparation					
4	83	Group 6	Relocation/Modifications	Pump Station (Quantities Reflect 6 Pump Stations)	Site Preparation	Clearing & Grubbing		87	6,126	3,445
4	84	Group 6	Relocation/Modifications	Pump Station (Quantities Reflect 6 Pump Stations)	Site Preparation	Canal/Drain Relocation		88	6,698	3,766
4	85	Group 6	Relocation/Modifications	Pump Station (Quantities Reflect 6 Pump Stations)	Site Preparation	Concrete Lining (Intake & Outfall)		83	4,029	2,266
4	86	Group 6	Relocation/Modifications	Pump Station (Quantities Reflect 6 Pump Stations)	Site Preparation	Rock Riprap At Outfall		83	4,029	2,266
4	87	Group 6	Relocation/Modifications	Pump Station (Quantities Reflect 6 Pump Stations)	Site Preparation	Pump & Sump Relocation		83	4,029	2,266
4	88	Group 6	Relocation/Modifications	Pump Station (Quantities Reflect 6 Pump Stations)	Site Preparation	Replace Electrical Panel		81	3,070	1,727
4	89	Group 6	Relocation/Modifications	Pump Station (Quantities Reflect 6 Pump Stations)	Site Preparation	PG&E Electrical Service		81	3,070	1,727
4	90	Group 6	Relocation/Modifications	Pump Station (Quantities Reflect 6 Pump Stations)	Site Preparation	12"Steel Pipe		83	4,029	2,266
4	91	Group 6	Relocation/Modifications	Pump Station (Quantities Reflect 6 Pump Stations)	Site Preparation	Dust Control		79	2,376	1,336
4	92	Group 6	Relocation/Modifications	Pump Station (Quantities Reflect 6 Pump Stations)	Site Preparation	Worker Protection		82	3,529	1,984
4	93	Group 6	Relocation/Modifications	Pump Station (Quantities Reflect 6 Pump Stations)	Site Preparation	Mobilization		80	2,963	1,666
4	94	Group 6	Relocation/Modifications	Groundwater Well Floodproofing (Quantities Reflect 27 Wells)						

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
4	95	Group 6	Relocation/Modifications	Groundwater Well Floodproofing (Quantities Reflect 27 Wells)	Site Preparation & Construction					
4	96	Group 6	Relocation/Modifications	Groundwater Well Floodproofing (Quantities Reflect 27 Wells)	Site Preparation & Construction	Clearing & Grubbing		87	6,126	3,445
4	97	Group 6	Relocation/Modifications	Groundwater Well Floodproofing (Quantities Reflect 27 Wells)	Site Preparation & Construction	Earthwork (Using Loader & Truck)		88	6,698	3,766
4	98	Group 6	Relocation/Modifications	Groundwater Well Floodproofing (Quantities Reflect 27 Wells)	Site Preparation & Construction	Revegetation		88	6,698	3,766
4	99	Group 6	Relocation/Modifications	Groundwater Well Floodproofing (Quantities Reflect 27 Wells)	Site Preparation & Construction	Pull Pump & Column & Reinstall After Modifications		83	4,029	2,266
4	100	Group 6	Relocation/Modifications	Groundwater Well Floodproofing (Quantities Reflect 27 Wells)	Site Preparation & Construction	Column Extension		83	4,029	2,266
4	101	Group 6	Relocation/Modifications	Groundwater Well Floodproofing (Quantities Reflect 27 Wells)	Site Preparation & Construction	Casing Extension		83	4,029	2,266
4	102	Group 6	Relocation/Modifications	Groundwater Well Floodproofing (Quantities Reflect 27 Wells)	Site Preparation & Construction	Discharge Piping Modifications		83	4,029	2,266
4	103	Group 6	Relocation/Modifications	Groundwater Well Floodproofing (Quantities Reflect 27 Wells)	Site Preparation & Construction	Replace Electrical Panel		81	3,070	1,727
4	104	Group 6	Relocation/Modifications	Groundwater Well Floodproofing (Quantities Reflect 27 Wells)	Site Preparation & Construction	PG&E Electrical Service		81	3,070	1,727
4	105	Group 6	Relocation/Modifications	Groundwater Well Floodproofing (Quantities Reflect 27 Wells)	Site Preparation & Construction	Dust Control		79	2,376	1,336
4	106	Group 6	Relocation/Modifications	Groundwater Well Floodproofing (Quantities Reflect 27 Wells)	Site Preparation & Construction	Mobilization		80	2,963	1,666
4	22	Group 7	Bend 10 Revetment							
4	23	Group 7	Bend 10 Revetment	Site Preparation						

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
4	24	Group 7	Bend 10 Revetment	Site Preparation	Clearing & Grubbing (Levee Preparation)			87	6,126	3,445
4	25	Group 7	Bend 10 Revetment	Right Setback Levee (Bend 10 Only)						
4	26	Group 7	Bend 10 Revetment	Right Setback Levee (Bend 10 Only)	Compacted Embankment			88	6,698	3,766
4	27	Group 7	Bend 10 Revetment	Right Setback Levee (Bend 10 Only)	Slurry Wall (100 Percent Of Total Levee Length)			87	6,126	3,445
4	28	Group 7	Bend 10 Revetment	Right Setback Levee (Bend 10 Only)	USACE Trench Foundation			88	6,698	3,766
4	29	Group 7	Bend 10 Revetment	Right Setback Levee (Bend 10 Only)	Borrow Excavation (< 1 Mile)			88	6,698	3,766
4	30	Group 7	Bend 10 Revetment	General						
4	31	Group 7	Bend 10 Revetment	General	Seeding (Levee Slopes)			88	6,698	3,766
4	32	Group 7	Bend 10 Revetment	General	Ramps & Turnabouts			88	6,698	3,766
4	33	Group 7	Bend 10 Revetment	General	Right Levee Aggregate Base Roadway			88	6,698	3,766
4	34	Group 7	Bend 10 Revetment	Revetment (Bend 10) Per Linear Foot						
4	44	Group 7	Bend 10 Revetment	Revetment (Bend 10) Per Linear Foot	Revetment (Bend 10) Subtotal Per Linear Foot (Subtotal 35 To 43)			87	6,126	3,445
4	45	Group 7	Bend 10 Revetment	Revetment (Bend 10) Per Linear Foot	Mobilization			80	2,963	1,666
4	49	Group 8	Vegetation & Irrigation							
4	50	Group 8	Vegetation & Irrigation	General Description						
4	51	Group 8	Vegetation & Irrigation	General Description	Plant Establishment (12 Months)			81	3,070	1,727
4	52	Group 8	Vegetation & Irrigation	General Description	Landscape Maintenance (12 Months Or As Needed)			81	3,070	1,727
4	53	Group 8	Vegetation & Irrigation	General Description	Agricultural Topsoil (6" Layer)			88	6,698	3,766
4	54	Group 8	Vegetation & Irrigation	General Description	Erosion Control Fabric			80	2,963	1,666
4	55	Group 8	Vegetation & Irrigation	General Description	Irrigation System			81	3,070	1,727
4	56	Group 8	Vegetation & Irrigation	General Description	Beaver Fence			80	2,963	1,666
4	57	Group 8	Vegetation & Irrigation	General Description	Seeding			88	6,698	3,766
4	58	Group 8	Vegetation & Irrigation	General Description	Pole Cuttings			80	2,963	1,666
4	59	Group 8	Vegetation & Irrigation	General Description	Fascine Bundle			80	2,963	1,666
4	60	Group 8	Vegetation & Irrigation	General Description	Instream Woody Material			80	2,963	1,666

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
4	61	Group 8	Vegetation & Irrigation	General Description	Treepot Installation T8 - Fcf			81	3,070	1,727
4	62	Group 8	Vegetation & Irrigation	General Description	Treepot Installation T8 - Oag			81	3,070	1,727
4	63	Group 8	Vegetation & Irrigation	General Description	Treepot Installation T4 - Bbt			81	3,070	1,727
4	64	Group 8	Vegetation & Irrigation	General Description	Treepot Installation T4 - Cbm			81	3,070	1,727
4	65	Group 8	Vegetation & Irrigation	General Description	Treepot Installation DP - Cmb			81	3,070	1,727
4	66	Group 8	Vegetation & Irrigation	General Description	Treepot Installation DP - Crg			81	3,070	1,727
4	67	Group 8	Vegetation & Irrigation	General Description	Treepot Installation DP - Rbh			81	3,070	1,727
4	68	Group 8	Vegetation & Irrigation	General Description	Treepot Installation DP - Sgf			81	3,070	1,727
4	69	Group 8	Vegetation & Irrigation	General Description	Treepot Installation DP - Fcf			81	3,070	1,727
4	70	Group 8	Vegetation & Irrigation	General Description	Treepot Installation DP - Oag			81	3,070	1,727
4	71	Group 8	Vegetation & Irrigation	General Description	Treepot Installation D6 - Swt			81	3,070	1,727
4	72	Group 8	Vegetation & Irrigation	General Description	Treepot Installation D6 - Bwt			81	3,070	1,727
4	73	Group 8	Vegetation & Irrigation	General Description	Mobilization			80	2,963	1,666
7	1	GROUP 1	MPB Channel							
7	2	GROUP 1	MPB Channel	Bypass Channel						
7	3	GROUP 1	MPB Channel	Bypass Channel	General					
7	4	GROUP 1	MPB Channel	Bypass Channel	General	Clearing & Grubbing		87	6,126	3,445
7	5	GROUP 1	MPB Channel	Bypass Channel	General	Water For Dust Abatement		79	2,376	1,336
7	6	GROUP 1	MPB Channel	Bypass Channel	Channel and Floodplain Excavation					
7	7	GROUP 1	MPB Channel	Bypass Channel	Channel and Floodplain Excavation	Course Channel Excavation (Scraper) & Local Haul		88	6,698	3,766
7	8	GROUP 1	MPB Channel	Bypass Channel	Channel and Floodplain Excavation	Course Channel Excavation (Loader & Dozer)		88	6,698	3,766
7	9	GROUP 1	MPB Channel	Bypass Channel	Channel and Floodplain Excavation	Fine Channel Excavation & Shaping (Excavator)		84	4,462	2,509
7	10	GROUP 1	MPB Channel	Bypass Channel	Channel and Floodplain Excavation	Haul Off Site (<20 Miles)		88	6,698	3,766
7	11	GROUP 1	MPB Channel	Bypass Channel	Channel and Floodplain Excavation	Floodplain Excavation (Scraper) & Local Haul		88	6,698	3,766
7	12	GROUP 1	MPB Channel	Bypass Channel	Channel and Floodplain Excavation	Floodplain Fill, Grading, & Compaction Between Levees		88	6,698	3,766

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
7	13	GROUP 1	MPB Channel	Bypass Channel	Channel and Floodplain Excavation	Revetment		87	6,126	3,445
7	14	GROUP 1	MPB Channel	Bypass Channel	Grade Control Structures					
7	15	GROUP 1	MPB Channel	Bypass Channel	Grade Control Structures	Single Wall, Anchored, Sheet Pipe Structures (9 Each Structures)				
7	16	GROUP 1	MPB Channel	Bypass Channel	Grade Control Structures	Single Wall, Anchored, Sheet Pipe Structures (9 Each Structures)	Clearing & Grubbing	87	6,126	3,445
7	17	GROUP 1	MPB Channel	Bypass Channel	Grade Control Structures	Single Wall, Anchored, Sheet Pipe Structures (9 Each Structures)	Onsite Earthwork For Anchor Systems (Remove & Recompact)	84	4,462	2,509
7	18	GROUP 1	MPB Channel	Bypass Channel	Grade Control Structures	Single Wall, Anchored, Sheet Pipe Structures (9 Each Structures)	Dewatering	83	4,029	2,266
7	20	GROUP 1	MPB Channel	Bypass Channel	Grade Control Structures	Single Wall, Anchored, Sheet Pipe Structures (9 Each Structures)	Deliver Materials (CMI Atlanta GA, 2 Trucks)	76	1,774	998
7	21	GROUP 1	MPB Channel	Bypass Channel	Grade Control Structures	Single Wall, Anchored, Sheet Pipe Structures (9 Each Structures)	Construct Driving Guide & Use As Wales	83	4,029	2,266
7	22	GROUP 1	MPB Channel	Bypass Channel	Grade Control Structures	Single Wall, Anchored, Sheet Pipe Structures (9 Each Structures)	Sheet Pile Installation (Single Sheet 20'x420')	103	38,638	21,728
7	23	GROUP 1	MPB Channel	Bypass Channel	Grade Control Structures	Single Wall, Anchored, Sheet Pipe Structures (9 Each Structures)	Caps For Tops (20' Lengths Material & Labor)	83	4,029	2,266
7	24	GROUP 1	MPB Channel	Bypass Channel	Grade Control Structures	Single Wall, Anchored, Sheet Pipe Structures (9 Each Structures)	Anchor Support System (Pilings, Cable, Wales, Etc)	83	4,029	2,266
7	25	GROUP 1	MPB Channel	Bypass Channel	Grade Control Structures	Single Wall, Anchored, Sheet Pipe Structures (9 Each Structures)	Dust Control	79	2,376	1,336
7	26	GROUP 1	MPB Channel	Bypass Channel	Other Costs					
7	27	GROUP 1	MPB Channel	Bypass Channel	Other Costs	SWPPP		75	1,581	889
7	28	GROUP 1	MPB Channel	Bypass Channel	Other Costs	Worker Protection		82	3,529	1,984
7	29	GROUP 1	MPB Channel	Bypass Channel	Other Costs	Mobilization		80	2,963	1,666
7	397	GROUP 2	Reach 3							
7	398	GROUP 2	Reach 3	Levee Removal						
7	399	GROUP 2	Reach 3	Levee Removal	Haul Excess material by truck < 20 miles			88	6,698	3,766
7	400	GROUP 2	Reach 3	Levee Preparation						
7	401	GROUP 2	Reach 3	Levee Preparation	Clearing & Grubbing			87	6,126	3,445
7	402	GROUP 2	Reach 3	Levee Preparation	Tree Removal			87	6,126	3,445
7	403	GROUP 2	Reach 3	New Levee						

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
7	404	GROUP 2	Reach 3	New Levee	Compacted Embankment			88	6,698	3,766
7	405	GROUP 2	Reach 3	New Levee	Slurry Wall (10 Percent Of Total Levee Length)			87	6,126	3,445
7	406	GROUP 2	Reach 3	New Levee	USACE Trench Foundation			88	6,698	3,766
7	407	GROUP 2	Reach 3	New Levee	Borrow Excavation and Haul			88	6,698	3,766
7	408	GROUP 2	Reach 3	General						
7	409	GROUP 2	Reach 3	General	Seeding (Levee Slopes)			88	6,698	3,766
7	410	GROUP 2	Reach 3	General	Ramps & Turnabouts			88	6,698	3,766
7	411	GROUP 2	Reach 3	General	Levee Aggregate Base Roadway			88	6,698	3,766
7	412	GROUP 2	Reach 3	General	Haul Excess Material By Truck < 20 Miles (Drainage Channel)			88	6,698	3,766
7	413	GROUP 2	Reach 3	Mobilization				80	2,963	1,666
7	30	GROUP 3	Levees	Levees						
7	31	GROUP 3	Levees	Levees	Levee Preparation					
7	32	GROUP 3	Levees	Levees	Levee Preparation	Clearing & Grubbing		87	6,126	3,445
7	33	GROUP 3	Levees	Levees	Levee Preparation	Tree Removal		87	6,126	3,445
7	34	GROUP 3	Levees	Levees	Right Setback Levee					
7	35	GROUP 3	Levees	Levees	Right Setback Levee	Compacted Embankment		88	6,698	3,766
7	36	GROUP 3	Levees	Levees	Right Setback Levee	Slurry Wall (10 Percent Of Total Levee Length)		87	6,126	3,445
7	37	GROUP 3	Levees	Levees	Right Setback Levee	USACE Trench Foundation		88	6,698	3,766
7	38	GROUP 3	Levees	Levees	Right Setback Levee	Borrow Excavation (< 1 Mile)		88	6,698	3,766
7	39	GROUP 3	Levees	Levees	Left Setback Levee					
7	40	GROUP 3	Levees	Levees	Left Setback Levee	Compacted Embankment		88	6,698	3,766
7	41	GROUP 3	Levees	Levees	Left Setback Levee	Slurry Wall (10 Percent Of Total Levee Length)		87	6,126	3,445
7	42	GROUP 3	Levees	Levees	Left Setback Levee	USACE Trench Foundation		88	6,698	3,766
7	43	GROUP 3	Levees	Levees	Left Setback Levee	Borrow Excavation (< 1 Mile)		88	6,698	3,766
7	44	GROUP 3	Levees	Levees	General					
7	45	GROUP 3	Levees	Levees	General	Seeding (Levee Slopes)		88	6,698	3,766
7	46	GROUP 3	Levees	Levees	General	Ramps & Turnabouts		88	6,698	3,766
7	47	GROUP 3	Levees	Levees	General	Right Levee Aggregate Base Roadway		88	6,698	3,766
7	48	GROUP 3	Levees	Levees	General	Left Levee Aggregate Base Roadway		88	6,698	3,766

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
7	49	GROUP 3	Levees	Levees	General	Haul Excess Material By Truck < 20 Miles (Drainage Channel)		88	6,698	3,766
7	50	GROUP 3	Levees	Levees	General	Mobilization		80	2,963	1,666
7	287	GROUP 4	Diversion Structure (Bypass Channel)	Diversion Structure (Bypass Channel)						
7	288	GROUP 4	Diversion Structure (Bypass Channel)	Diversion Structure (Bypass Channel)	Spillway Structure					
7	289	GROUP 4	Diversion Structure (Bypass Channel)	Diversion Structure (Bypass Channel)	Spillway Structure	Excavation For Spillway		88	6,698	3,766
7	290	GROUP 4	Diversion Structure (Bypass Channel)	Diversion Structure (Bypass Channel)	Spillway Structure	Compacted Backfill		88	6,698	3,766
7	291	GROUP 4	Diversion Structure (Bypass Channel)	Diversion Structure (Bypass Channel)	Spillway Structure	Cutoff Walls (Steel Sheet Piling)		103	38,638	21,728
7	292	GROUP 4	Diversion Structure (Bypass Channel)	Diversion Structure (Bypass Channel)	Spillway Structure	Precast prestressed concrete pile (14"x14"x20')		103	38,638	21,728
7	293	GROUP 4	Diversion Structure (Bypass Channel)	Diversion Structure (Bypass Channel)	Spillway Structure	Concrete		83	4,029	2,266
7	294	GROUP 4	Diversion Structure (Bypass Channel)	Diversion Structure (Bypass Channel)	Spillway Structure	Steel Reinforcement		83	4,029	2,266
7	295	GROUP 4	Diversion Structure (Bypass Channel)	Diversion Structure (Bypass Channel)	Spillway Structure	Waterstop		78	2,118	1,191
7	296	GROUP 4	Diversion Structure (Bypass Channel)	Diversion Structure (Bypass Channel)	Radial Gates					
7	297	GROUP 4	Diversion Structure (Bypass Channel)	Diversion Structure (Bypass Channel)	Radial Gates	6 Radial Gates (Each 20'x8')		83	4,029	2,266
7	298	GROUP 4	Diversion Structure (Bypass Channel)	Diversion Structure (Bypass Channel)	Radial Gates	Hoist (Motor Operated W/Wire Ropes)		83	4,029	2,266
7	299	GROUP 4	Diversion Structure (Bypass Channel)	Diversion Structure (Bypass Channel)	Radial Gates	Embedded Metal (Stainless Steel)		83	4,029	2,266
7	300	GROUP 4	Diversion Structure (Bypass Channel)	Diversion Structure (Bypass Channel)	Radial Gates	Steel Stoplogs 6 EA 21'x12' Deep Inc Ribs Etc		83	4,029	2,266
7	301	GROUP 4	Diversion Structure (Bypass Channel)	Diversion Structure (Bypass Channel)	Radial Gates	Railing On Top Deck		83	4,029	2,266
7	302	GROUP 4	Diversion Structure (Bypass Channel)	Diversion Structure (Bypass Channel)	Radial Gates	Railing On Bridge Deck		83	4,029	2,266
7	303	GROUP 4	Diversion Structure (Bypass Channel)	Diversion Structure (Bypass Channel)	Radial Gates	Riprap		83	4,029	2,266
7	304	GROUP 4	Diversion Structure (Bypass Channel)	Diversion Structure (Bypass Channel)	Radial Gates	Water Velocity & Flow Measurement System		81	3,070	1,727
7	305	GROUP 4	Diversion Structure (Bypass Channel)	Diversion Structure (Bypass Channel)	Radial Gates	Propane Tank & Enclosure (15'x20'x6' HCB)		80	2,963	1,666
7	306	GROUP 4	Diversion Structure (Bypass Channel)	Diversion Structure (Bypass Channel)	Radial Gates	Emergency Generator		82	3,529	1,984
7	307	GROUP 4	Diversion Structure (Bypass Channel)	Diversion Structure (Bypass Channel)	Dam Construction					

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
7	308	GROUP 4	Diversion Structure (Bypass Channel)	Diversion Structure (Bypass Channel)	Dam Construction	Excavation For Dam		83	4,029	2,266
7	309	GROUP 4	Diversion Structure (Bypass Channel)	Diversion Structure (Bypass Channel)	Dam Construction	Compacted Embankment - Impervious Fill		88	6,698	3,766
7	310	GROUP 4	Diversion Structure (Bypass Channel)	Diversion Structure (Bypass Channel)	Dam Construction	Compacted Embankment - Semipervious Fill		88	6,698	3,766
7	311	GROUP 4	Diversion Structure (Bypass Channel)	Diversion Structure (Bypass Channel)	Dam Construction	Compacted Embankment - Pervious Fill		88	6,698	3,766
7	312	GROUP 4	Diversion Structure (Bypass Channel)	Diversion Structure (Bypass Channel)	Dam Construction	Geotextile Fabric		80	2,963	1,666
7	313	GROUP 4	Diversion Structure (Bypass Channel)	Diversion Structure (Bypass Channel)	Dam Construction	9" Bedding		84	4,337	2,439
7	314	GROUP 4	Diversion Structure (Bypass Channel)	Diversion Structure (Bypass Channel)	Dam Construction	Stone Slope Protection, Type 1		83	4,029	2,266
7	315	GROUP 4	Diversion Structure (Bypass Channel)	Diversion Structure (Bypass Channel)	Dam Construction	Access Road (4" AC/6" AB, 24' Wide)		88	6,698	3,766
7	316	GROUP 4	Diversion Structure (Bypass Channel)	Diversion Structure (Bypass Channel)	Dam Construction	7' Chain Link Fence Including Barbed Wire		80	2,963	1,666
7	317	GROUP 4	Diversion Structure (Bypass Channel)	Diversion Structure (Bypass Channel)	Dam Construction	Pipe Handrail (On U/S & D/S Side Of Dam)		83	4,029	2,266
7	318	GROUP 4	Diversion Structure (Bypass Channel)	Diversion Structure (Bypass Channel)	Dam Construction	Automatic Entrance Gate (16' Wide)		81	3,070	1,727
7	319	GROUP 4	Diversion Structure (Bypass Channel)	Diversion Structure (Bypass Channel)	Dam Construction	Mobilization		80	2,963	1,666
7	335	GROUP 5	Diversion Structure (SJR)	Diversion Structure (SJR)						
7	336	GROUP 5	Diversion Structure (SJR)	Diversion Structure (SJR)	Spillway Structure					
7	337	GROUP 5	Diversion Structure (SJR)	Diversion Structure (SJR)	Spillway Structure	Coffer Dam (Steel Sheet Piling Inc Bracing)		103	38,638	21,728
7	338	GROUP 5	Diversion Structure (SJR)	Diversion Structure (SJR)	Spillway Structure	Coffer Dam (Filling With Dirt & Removal)		103	38,638	21,728
7	339	GROUP 5	Diversion Structure (SJR)	Diversion Structure (SJR)	Spillway Structure	Dewatering (8 Months)		83	4,029	2,266
7	340	GROUP 5	Diversion Structure (SJR)	Diversion Structure (SJR)	Spillway Structure	Excavation For Spillway		88	6,698	3,766
7	341	GROUP 5	Diversion Structure (SJR)	Diversion Structure (SJR)	Spillway Structure	Compacted Backfill		88	6,698	3,766
7	342	GROUP 5	Diversion Structure (SJR)	Diversion Structure (SJR)	Spillway Structure	Cutoff Walls (Steel Sheet Piling)		103	38,638	21,728
7	343	GROUP 5	Diversion Structure (SJR)	Diversion Structure (SJR)	Spillway Structure	Precast Prestressed Concrete Pile (14"x14"x20')		103	38,638	21,728
7	344	GROUP 5	Diversion Structure (SJR)	Diversion Structure (SJR)	Spillway Structure	Concrete		83	4,029	2,266
7	345	GROUP 5	Diversion Structure (SJR)	Diversion Structure (SJR)	Spillway Structure	Steel Reinforcement		83	4,029	2,266

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
7	346	GROUP 5	Diversion Structure (SJR)	Diversion Structure (SJR)	Spillway Structure	Waterstop		78	2,118	1,191
7	347	GROUP 5	Diversion Structure (SJR)	Diversion Structure (SJR)	Radial Gates & Stoplogs					
7	348	GROUP 5	Diversion Structure (SJR)	Diversion Structure (SJR)	Radial Gates & Stoplogs	4 Radial Gates (Each 16'x18')		83	4,029	2,266
7	349	GROUP 5	Diversion Structure (SJR)	Diversion Structure (SJR)	Radial Gates & Stoplogs	Hoist (Motor Operated W/Wire Ropes)		83	4,029	2,266
7	350	GROUP 5	Diversion Structure (SJR)	Diversion Structure (SJR)	Radial Gates & Stoplogs	Embedded Metal (Stainless Steel)		83	4,029	2,266
7	351	GROUP 5	Diversion Structure (SJR)	Diversion Structure (SJR)	Radial Gates & Stoplogs	Stoplog (Steel, Each 12'x21') Inc Ribs		83	4,029	2,266
7	352	GROUP 5	Diversion Structure (SJR)	Diversion Structure (SJR)	Radial Gates & Stoplogs	Railing On Top Deck		83	4,029	2,266
7	353	GROUP 5	Diversion Structure (SJR)	Diversion Structure (SJR)	Radial Gates & Stoplogs	Riprap		83	4,029	2,266
7	354	GROUP 5	Diversion Structure (SJR)	Diversion Structure (SJR)	Radial Gates & Stoplogs	Water Velocity & Flow Measurement System		81	3,070	1,727
7	355	GROUP 5	Diversion Structure (SJR)	Diversion Structure (SJR)	Radial Gates & Stoplogs	Propane Tank & Enclosure (15'x20'x6' HCB)		80	2,963	1,666
7	356	GROUP 5	Diversion Structure (SJR)	Diversion Structure (SJR)	Radial Gates & Stoplogs	Emergency Generator		80	2,963	1,666
7	357	GROUP 5	Diversion Structure (SJR)	Diversion Structure (SJR)	Dam Construction					
7	358	GROUP 5	Diversion Structure (SJR)	Diversion Structure (SJR)	Dam Construction	Coffer Dam (Filling With Dirt & Removal)		103	38,638	21,728
7	359	GROUP 5	Diversion Structure (SJR)	Diversion Structure (SJR)	Dam Construction	Dewatering (6 Months)		83	4,029	2,266
7	360	GROUP 5	Diversion Structure (SJR)	Diversion Structure (SJR)	Dam Construction	Excavation For dam		88	6,698	3,766
7	361	GROUP 5	Diversion Structure (SJR)	Diversion Structure (SJR)	Dam Construction	Compacted Embankment - Impervious Fill		88	6,698	3,766
7	362	GROUP 5	Diversion Structure (SJR)	Diversion Structure (SJR)	Dam Construction	Compacted Embankment - Semipervious Fill		88	6,698	3,766
7	363	GROUP 5	Diversion Structure (SJR)	Diversion Structure (SJR)	Dam Construction	Compacted Embankment - Pervious Fill		88	6,698	3,766
7	364	GROUP 5	Diversion Structure (SJR)	Diversion Structure (SJR)	Dam Construction	Geotextile Fabric		80	2,963	1,666
7	365	GROUP 5	Diversion Structure (SJR)	Diversion Structure (SJR)	Dam Construction	9" Bedding		84	4,337	2,439
7	366	GROUP 5	Diversion Structure (SJR)	Diversion Structure (SJR)	Dam Construction	Stone Slope Protection, Type 1		83	4,029	2,266
7	367	GROUP 5	Diversion Structure (SJR)	Diversion Structure (SJR)	Dam Construction	Access Road (4" AC/6" AB, 24' Wide)		88	6,698	3,766
7	368	GROUP 5	Diversion Structure (SJR)	Diversion Structure (SJR)	Dam Construction	7' Chain Link Fence Including Barbed Wire		80	2,963	1,666

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
7	369	GROUP 5	Diversion Structure (SJR)	Diversion Structure (SJR)	Dam Construction	Pipe Handrail (On U/S & D/S Side Of Dam)		83	4,029	2,266
7	370	GROUP 5	Diversion Structure (SJR)	Diversion Structure (SJR)	Dam Construction	Automatic Entrance Gate (16' Wide)		81	3,070	1,727
7	371	GROUP 5	Diversion Structure (SJR)	Diversion Structure (SJR)	Dam Construction	Mobilization		80	2,963	1,666
7	192	GROUP 6	Fish Screen							
7	193	GROUP 6	Fish Screen	Fish Screen Structure						
7	194	GROUP 6	Fish Screen	Fish Screen Structure	Cofferdam (Steel Sheet Piling Including Bracing)			103	38,638	21,728
7	195	GROUP 6	Fish Screen	Fish Screen Structure	Cofferdam (Filling With Dirt & Removal)			103	38,638	21,728
7	196	GROUP 6	Fish Screen	Fish Screen Structure	Dewatering (For 8 Months)			83	4,029	2,266
7	197	GROUP 6	Fish Screen	Fish Screen Structure	Mobilization			80	2,963	1,666
7	198	GROUP 6	Fish Screen	Fish Screen Structure	Excavation			88	6,698	3,766
7	199	GROUP 6	Fish Screen	Fish Screen Structure	Backfill & Compaction			88	6,698	3,766
7	200	GROUP 6	Fish Screen	Fish Screen Structure	Concrete			83	4,029	2,266
7	201	GROUP 6	Fish Screen	Fish Screen Structure	Steel Reinforcement			83	4,029	2,266
7	202	GROUP 6	Fish Screen	Screen Panels				83	4,029	2,266
7	203	GROUP 6	Fish Screen	Flow Control Baffles (Same Size As Screen Panels)				83	4,029	2,266
7	204	GROUP 6	Fish Screen	Blocker Panels				83	4,029	2,266
7	205	GROUP 6	Fish Screen	Structural Steel - Framework For Screens, Baffles, & Blocker				83	4,029	2,266
7	206	GROUP 6	Fish Screen	Fish Screen Automatic Cleaner (Atlas ST8100)				83	4,029	2,266
7	208	GROUP 6	Fish Screen	Fish Return Pipes						
7	209	GROUP 6	Fish Screen	Fish Return Pipes	Pipe Trench Excavation (2:1 Side Slopes)			83	4,029	2,266
7	210	GROUP 6	Fish Screen	Fish Return Pipes	Pipe Bedding (CLSM To Depth Of 0.7 D, Cement Sand Slurry)			81	3,070	1,727
7	211	GROUP 6	Fish Screen	Fish Return Pipes	Backfill & Compaction (5' Above Pipe)			86	5,320	2,992
7	212	GROUP 6	Fish Screen	Fish Return Pipes	Concrete			83	4,029	2,266
7	213	GROUP 6	Fish Screen	Fish Return Pipes	Steel Reinforcement			83	4,029	2,266
7	214	GROUP 6	Fish Screen	Fish Return Pipes	Pipes (8 @ 1900 FT Each) 30" HDPE, SDR 32.5 Pipes			83	4,029	2,266
7	215	GROUP 6	Fish Screen	Fish Return Pipes	Access Manholes			83	4,029	2,266
7	216	GROUP 6	Fish Screen	Outlet Structure For Fish Return Pipes (TBD)						

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
7	217	GROUP 6	Fish Screen	Pump Station						
7	218	GROUP 6	Fish Screen	Pump Station	Excavation			88	6,698	3,766
7	219	GROUP 6	Fish Screen	Pump Station	Backfill			88	6,698	3,766
7	220	GROUP 6	Fish Screen	Pump Station	Concrete			83	4,029	2,266
7	221	GROUP 6	Fish Screen	Pump Station	Steel Reinforcement			83	4,029	2,266
7	222	GROUP 6	Fish Screen	Pump Station	Wemco-Hydrostal 30" Pump (16,000 GPM)			83	4,029	2,266
7	223	GROUP 6	Fish Screen	Pump Station	Open Frame Pitch Valve 30"			83	4,029	2,266
7	224	GROUP 6	Fish Screen	Control Building				80	2,963	1,666
7	225	GROUP 6	Fish Screen	Trashrack				83	4,029	2,266
7	226	GROUP 6	Fish Screen	Trashrake - 150' Long Across Four Vee Opening				83	4,029	2,266
7	228	GROUP 6	Fish Screen	Miscellaneous Metalwork (Handrail, Guardrail, & Fittings)				83	4,029	2,266
7	229	GROUP 6	Fish Screen	Mobilization				80	2,963	1,666
7	128	GROUP 7	Reach 2B Levee Extension FP-1							
7	129	GROUP 7	Reach 2B Levee Extension FP-1	Levees						
7	130	GROUP 7	Reach 2B Levee Extension FP-1	Levees	Levee Construction (Extension)					
7	131	GROUP 7	Reach 2B Levee Extension FP-1	Levees	Levee Construction (Extension)	Levee Preparation				
7	132	GROUP 7	Reach 2B Levee Extension FP-1	Levees	Levee Construction (Extension)	Levee Preparation	Clearing & Grubbing	87	6,126	3,445
7	133	GROUP 7	Reach 2B Levee Extension FP-1	Levees	Levee Construction (Extension)	Levee Preparation	Tree Removal	87	6,126	3,445
7	134	GROUP 7	Reach 2B Levee Extension FP-1	Levees	Levee Construction (Extension)	Right Setback Levee				
7	135	GROUP 7	Reach 2B Levee Extension FP-1	Levees	Levee Construction (Extension)	Right Setback Levee	Compacted Embankment	88	6,698	3,766
7	136	GROUP 7	Reach 2B Levee Extension FP-1	Levees	Levee Construction (Extension)	Right Setback Levee	Slurry Wall (Total Levee Length)	87	6,126	3,445
7	137	GROUP 7	Reach 2B Levee Extension FP-1	Levees	Levee Construction (Extension)	Right Setback Levee	USACE Trench Foundation	88	6,698	3,766
7	138	GROUP 7	Reach 2B Levee Extension FP-1	Levees	Levee Construction (Extension)	Right Setback Levee	Borrow Excavation (< 1 Mile)	88	6,698	3,766
7	139	GROUP 7	Reach 2B Levee Extension FP-1	Levees	Levee Construction (Extension)	Left Setback Levee				
7	140	GROUP 7	Reach 2B Levee Extension FP-1	Levees	Levee Construction (Extension)	Left Setback Levee	Compacted Embankment	88	6,698	3,766
7	141	GROUP 7	Reach 2B Levee Extension FP-1	Levees	Levee Construction (Extension)	Left Setback Levee	Slurry Wall (Total Levee Length)	87	6,126	3,445
7	142	GROUP 7	Reach 2B Levee Extension FP-1	Levees	Levee Construction (Extension)	Left Setback Levee	USACE Trench Foundation	88	6,698	3,766

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
7	143	GROUP 7	Reach 2B Levee Extension FP-1	Levees	Levee Construction (Extension)	Left Setback Levee	Borrow Excavation (< 1 Mile)	88	6,698	3,766
7	144	GROUP 7	Reach 2B Levee Extension FP-1	Levees	Levee Construction (Extension)	General				
7	145	GROUP 7	Reach 2B Levee Extension FP-1	Levees	Levee Construction (Extension)	General	Seeding (Levee Slopes)	88	6,698	3,766
7	146	GROUP 7	Reach 2B Levee Extension FP-1	Levees	Levee Construction (Extension)	General	Ramp & Turnabouts	88	6,698	3,766
7	147	GROUP 7	Reach 2B Levee Extension FP-1	Levees	Levee Construction (Extension)	General	Right Levee Aggregate Base Roadway	88	6,698	3,766
7	148	GROUP 7	Reach 2B Levee Extension FP-1	Levees	Levee Construction (Extension)	General	Left Levee Aggregate Base Roadway	88	6,698	3,766
7	149	GROUP 7	Reach 2B Levee Extension FP-1	Levees	Levee Construction (Extension)	General	Haul Excess Material By Truck (< 20 Miles, Drainage Channel)	88	6,698	3,766
7	150	GROUP 7	Reach 2B Levee Extension FP-1	Levees	Levee Construction (Extension)	General	Mobilization	80	2,963	1,666
7	151	GROUP 7	Reach 2B Levee Extension FP-1	Levees	Revetment					
7	152	GROUP 7	Reach 2B Levee Extension FP-1	Levees	Revetment	Levee Revetment (6,800 Linear Feet)				
7	153	GROUP 7	Reach 2B Levee Extension FP-1	Levees	Revetment	Levee Revetment (6,800 Linear Feet)	Mobilization & Demobilization (10%)	80	2,963	1,666
7	154	GROUP 7	Reach 2B Levee Extension FP-1	Levees	Revetment	Levee Revetment (6,800 Linear Feet)	Clearing & Grubbing	87	6,126	3,445
7	155	GROUP 7	Reach 2B Levee Extension FP-1	Levees	Revetment	Levee Revetment (6,800 Linear Feet)	Launch Rock	83	4,029	2,266
7	156	GROUP 7	Reach 2B Levee Extension FP-1	Levees	Revetment	Levee Revetment (6,800 Linear Feet)	Rock Slope Protection	83	4,029	2,266
7	157	GROUP 7	Reach 2B Levee Extension FP-1	Levees	Revetment	Levee Revetment (6,800 Linear Feet)	Clean Sand	83	4,029	2,266
7	158	GROUP 7	Reach 2B Levee Extension FP-1	Levees	Revetment	Levee Revetment (6,800 Linear Feet)	Landscaping (Ag Soil, Plants, Etc)	82	3,544	1,993
7	159	GROUP 7	Reach 2B Levee Extension FP-1	Levees	Revetment	Levee Revetment (6,800 Linear Feet)	Erosion Control	75	1,581	889
7	160	GROUP 7	Reach 2B Levee Extension FP-1	Levees	Revetment	Levee Revetment (6,800 Linear Feet)	Environmental Mitigation (20% Of Subtotal)	75	1,581	889
7	161	GROUP 7	Reach 2B Levee Extension FP-1	Levees	Revetment	Levee Revetment (6,800 Linear Feet)	Rock Slope - Labor	83	4,029	2,266
7	162	GROUP 7	Reach 2B Levee Extension FP-1	Levees	Revetment	Levee Revetment (6,800 Linear Feet)	Mobilization	80	2,963	1,666
7	163	GROUP 7	Reach 2B Levee Extension FP-1	Floodplain & Lands						
7	164	GROUP 7	Reach 2B Levee Extension FP-1	Floodplain & Lands	Levee Removal					

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
7	165	GROUP 7	Reach 2B Levee Extension FP-1	Floodplain & Lands	Levee Removal	Excavation Of Levee & Hauling Of Excess Material By Truck (< 20 Miles)		88	6,698	3,766
7	166	GROUP 7	Reach 2B Levee Extension FP-1	Floodplain & Lands	Levee Removal	Mobilization		80	2,963	1,666
7	372	GROUP 8	Reach 2B							
7	373	GROUP 8	Reach 2B	Compact Alignment Fish Barrier						
7	374	GROUP 8	Reach 2B	Compact Alignment Fish Barrier	Clearing & Grubbing			87	6,126	3,445
7	375	GROUP 8	Reach 2B	Compact Alignment Fish Barrier	Sheet Pile Coffer Dams			103	38,638	21,728
7	376	GROUP 8	Reach 2B	Compact Alignment Fish Barrier	Sheet Pile Removal			103	38,638	21,728
7	377	GROUP 8	Reach 2B	Compact Alignment Fish Barrier	Dewatering			83	4,029	2,266
7	378	GROUP 8	Reach 2B	Compact Alignment Fish Barrier	Rock Riprap Approaches - Labor			83	4,029	2,266
7	380	GROUP 8	Reach 2B	Compact Alignment Fish Barrier	Site Excavation (Excludes Bypass Channel)			88	6,698	3,766
7	381	GROUP 8	Reach 2B	Compact Alignment Fish Barrier	Engineered Fill			88	6,698	3,766
7	382	GROUP 8	Reach 2B	Compact Alignment Fish Barrier	Transition Road Construction (6" AB)			88	6,698	3,766
7	383	GROUP 8	Reach 2B	Compact Alignment Fish Barrier	Structural Concrete			84	4,462	2,509
7	384	GROUP 8	Reach 2B	Compact Alignment Fish Barrier	18" Concrete Piles (30' Deep)			103	38,638	21,728
7	385	GROUP 8	Reach 2B	Compact Alignment Fish Barrier	Concrete Pile Cap			83	4,029	2,266
7	386	GROUP 8	Reach 2B	Compact Alignment Fish Barrier	Bridge Appurtenances			83	4,029	2,266
7	387	GROUP 8	Reach 2B	Compact Alignment Fish Barrier	Trash Rack & Bar Rack/Fish Barrier			83	4,029	2,266
7	388	GROUP 8	Reach 2B	Compact Alignment Fish Barrier	Steel Monorail Supports			83	4,029	2,266
7	389	GROUP 8	Reach 2B	Compact Alignment Fish Barrier	Traffic Guard Railing			83	4,029	2,266
7	390	GROUP 8	Reach 2B	Compact Alignment Fish Barrier	Generator & Transformer			83	4,029	2,266
7	391	GROUP 8	Reach 2B	Compact Alignment Fish Barrier	Bosker Trash Rake/Hoist			83	4,029	2,266
7	392	GROUP 8	Reach 2B	Compact Alignment Fish Barrier	Access Gates			81	3,070	1,727
7	393	GROUP 8	Reach 2B	Compact Alignment Fish Barrier	Dust Control			79	2,376	1,336
7	394	GROUP 8	Reach 2B	Compact Alignment Fish Barrier	SWPPP			75	1,581	889

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
7	395	GROUP 8	Reach 2B	Compact Alignment Fish Barrier	Worker Protection			82	3,529	1,984
7	396	GROUP 8	Reach 2B	Compact Alignment Fish Barrier	Mobilization			80	2,963	1,666
7	414	GROUP 9	Fresno Slough Dam							
7	415	GROUP 9	Fresno Slough Dam	San Joaquin River Bypass Canal South Option Lined						
7	416	GROUP 9	Fresno Slough Dam	San Joaquin River Bypass Canal South Option Lined	General					
7	417	GROUP 9	Fresno Slough Dam	San Joaquin River Bypass Canal South Option Lined	General	Clearing & Grubbing		87	6,126	3,445
7	418	GROUP 9	Fresno Slough Dam	San Joaquin River Bypass Canal South Option Lined	General	Water For Dust Abatement		79	2,376	1,336
7	419	GROUP 9	Fresno Slough Dam	San Joaquin River Bypass Canal South Option Lined	General	SWPPP		75	1,581	889
7	420	GROUP 9	Fresno Slough Dam	San Joaquin River Bypass Canal South Option Lined	General	Worker Protection		82	3,529	1,984
7	421	GROUP 9	Fresno Slough Dam	San Joaquin River Bypass Canal South Option Lined	General	Bridge (30'x165')		83	4,029	2,266
7	422	GROUP 9	Fresno Slough Dam	San Joaquin River Bypass Canal South Option Lined	General	Bridge Appurtenances		83	4,029	2,266
7	423	GROUP 9	Fresno Slough Dam	San Joaquin River Bypass Canal South Option Lined	Canal Excavation					
7	424	GROUP 9	Fresno Slough Dam	San Joaquin River Bypass Canal South Option Lined	Canal Excavation	Course Canal Excavation (Loader & Dozer)		88	6,698	3,766
7	425	GROUP 9	Fresno Slough Dam	San Joaquin River Bypass Canal South Option Lined	Canal Excavation	Haul Off Site (<20 Miles, Main Canal)		88	6,698	3,766
7	426	GROUP 9	Fresno Slough Dam	San Joaquin River Bypass Canal South Option Lined	Canal Excavation	Concrete Liner @ 6" Thick		84	4,462	2,509
7	427	GROUP 9	Fresno Slough Dam	San Joaquin River Bypass Canal South Option Lined	Canal Excavation	Riprap Approach (25' x bottom Canal Width)		83	4,029	2,266
7	428	GROUP 9	Fresno Slough Dam	San Joaquin River Bypass Canal South Option Lined	Levee Construction (Left & Right)					
7	429	GROUP 9	Fresno Slough Dam	San Joaquin River Bypass Canal South Option Lined	Levee Construction (Left & Right)	Compacted Embankment		88	6,698	3,766

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
7	430	GROUP 9	Fresno Slough Dam	San Joaquin River Bypass Canal South Option Lined	Levee Construction (Left & Right)	Inspection Trench (20% Of Levee Length)		88	6,698	3,766
7	431	GROUP 9	Fresno Slough Dam	San Joaquin River Bypass Canal South Option Lined	Levee Construction (Left & Right)	Seeding (Levee Slopes)		88	6,698	3,766
7	432	GROUP 9	Fresno Slough Dam	San Joaquin River Bypass Canal South Option Lined	Levee Construction (Left & Right)	Ramps & Turnabouts		88	6,698	3,766
7	433	GROUP 9	Fresno Slough Dam	San Joaquin River Bypass Canal South Option Lined	Levee Construction (Left & Right)	Levee Aggregate Base Roadway		88	6,698	3,766
7	434	GROUP 9	Fresno Slough Dam	San Joaquin River Bypass Canal South Option Lined	Levee Construction (Left & Right)	Mobilization		80	2,963	1,666
7	51	GROUP 10	Relocations	Relocations						
7	52	GROUP 10	Relocations	Relocations	Utilities					
7	53	GROUP 10	Relocations	Relocations	Utilities	Overhead Electrical Distribution Removal & Replacement		83	4,029	2,266
7	54	GROUP 10	Relocations	Relocations	Utilities	Mobilization		80	2,963	1,666
7	55	GROUP 10	Relocations	Relocations	Canal					
7	56	GROUP 10	Relocations	Relocations	Canal	Canal Relocations		88	6,698	3,766
7	57	GROUP 10	Relocations	Relocations	Canal	Mobilization		80	2,963	1,666
7	58	GROUP 10	Relocations	Relocations	Pump Station					
7	59	GROUP 10	Relocations	Relocations	Pump Station	General Pump Station Site Preparation & Construction (2 Each Locations)				
7	60	GROUP 10	Relocations	Relocations	Pump Station	General Pump Station Site Preparation & Construction (2 Each Locations)	Clearing & Grubbing	87	6,126	3,445
7	61	GROUP 10	Relocations	Relocations	Pump Station	General Pump Station Site Preparation & Construction (2 Each Locations)	Canal & Drain Relocation	88	6,698	3,766
7	62	GROUP 10	Relocations	Relocations	Pump Station	General Pump Station Site Preparation & Construction (2 Each Locations)	Concrete Lining (Intake & Outfall)	83	4,029	2,266
7	63	GROUP 10	Relocations	Relocations	Pump Station	General Pump Station Site Preparation & Construction (2 Each Locations)	Rock Riprap At Outfall	83	4,029	2,266

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
7	64	GROUP 10	Relocations	Relocations	Pump Station	General Pump Station Site Preparation & Construction (2 Each Locations)	Pump & Sump Relocation	83	4,029	2,266
7	65	GROUP 10	Relocations	Relocations	Pump Station	General Pump Station Site Preparation & Construction (2 Each Locations)	Replace Electrical Panel	81	3,070	1,727
7	66	GROUP 10	Relocations	Relocations	Pump Station	General Pump Station Site Preparation & Construction (2 Each Locations)	PG&E Electrical Service	81	3,070	1,727
7	67	GROUP 10	Relocations	Relocations	Pump Station	General Pump Station Site Preparation & Construction (2 Each Locations)	12" Steel Pipe	83	4,029	2,266
7	68	GROUP 10	Relocations	Relocations	Pump Station	General Pump Station Site Preparation & Construction (2 Each Locations)	Dust Control	79	2,376	1,336
7	69	GROUP 10	Relocations	Relocations	Pump Station	General Pump Station Site Preparation & Construction (2 Each Locations)	Worker Protection	82	3,529	1,984
7	70	GROUP 10	Relocations	Relocations	Pump Station	General Pump Station Site Preparation & Construction (2 Each Locations)	Mobilization	80	2,963	1,666
7	73	GROUP 10	Relocations	Relocations	Pump Station	(38 CFS 72" Pipeline From Isolation Structure To Approx. City Of Mendota Well 7)	Clearing & Grubbing	87	6,126	3,445
7	74	GROUP 10	Relocations	Relocations	Pump Station	(38 CFS 72" Pipeline From Isolation Structure To Approx. City Of Mendota Well 7)	Reinforced Concrete Pipe (72" RGRCP D-50 Pipe)	83	4,029	2,266
7	75	GROUP 10	Relocations	Relocations	Pump Station	(38 CFS 72" Pipeline From Isolation Structure To Approx. City Of Mendota Well 7)	Pipe Trench Excavation (2:1 Side Slopes)	83	4,029	2,266
7	76	GROUP 10	Relocations	Relocations	Pump Station	(38 CFS 72" Pipeline From Isolation Structure To Approx. City Of Mendota Well 7)	Pipe Bedding (CLSM To Depth Of 0.375D, Cement Sand Slurry)	81	3,070	1,727
7	77	GROUP 10	Relocations	Relocations	Pump Station	(38 CFS 72" Pipeline From Isolation Structure To Approx. City Of Mendota Well 7)	Pipe Backfill & Compaction (6' Above Pipe)	86	5,320	2,992

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
7	78	GROUP 10	Relocations	Relocations	Pump Station	(38 CFS 72" Pipeline From Isolation Structure To Approx. City Of Mendota Well 7)	Outlet Structure	84	4,226	2,376
7	79	GROUP 10	Relocations	Relocations	Pump Station	(38 CFS 72" Pipeline From Isolation Structure To Approx. City Of Mendota Well 7)	Pipe Appurtenances	83	4,029	2,266
7	80	GROUP 10	Relocations	Relocations	Pump Station	(38 CFS 72" Pipeline From Isolation Structure To Approx. City Of Mendota Well 7)	Dust Control	79	2,376	1,336
7	81	GROUP 10	Relocations	Relocations	Pump Station	(38 CFS 72" Pipeline From Isolation Structure To Approx. City Of Mendota Well 7)	SWPPP	75	1,581	889
7	82	GROUP 10	Relocations	Relocations	Pump Station	(38 CFS 72" Pipeline From Isolation Structure To Approx. City Of Mendota Well 7)	Worker Protection	82	3,529	1,984
7	84	GROUP 10	Relocations	Relocations	Pump Station	Lift Station - 38 CFS Near Isolation Structure	Clearing & Grubbing	87	6,126	3,445
7	85	GROUP 10	Relocations	Relocations	Pump Station	Lift Station - 38 CFS Near Isolation Structure	Pumps & Structure	80	2,963	1,666
7	86	GROUP 10	Relocations	Relocations	Pump Station	Lift Station - 38 CFS Near Isolation Structure	Coffer Dam	103	38,638	21,728
7	87	GROUP 10	Relocations	Relocations	Pump Station	Lift Station - 38 CFS Near Isolation Structure	Dewatering Within Coffer Dam	83	4,029	2,266
7	88	GROUP 10	Relocations	Relocations	Pump Station	Lift Station - 38 CFS Near Isolation Structure	Removal Of Existing Pumps & Pipeline	83	4,029	2,266
7	89	GROUP 10	Relocations	Relocations	Pump Station	Lift Station - 38 CFS Near Isolation Structure	Dust Control	79	2,376	1,336
7	90	GROUP 10	Relocations	Relocations	Pump Station	Lift Station - 38 CFS Near Isolation Structure	SWPPP	75	1,581	889
7	91	GROUP 10	Relocations	Relocations	Pump Station	Lift Station - 38 CFS Near Isolation Structure	Worker Protection	82	3,529	1,984
7	93	GROUP 10	Relocations	Relocations	Pump Station	(22 CFS 30" Pipeline At Well 7 To Existing Mowry Ranch Pipeline)				
7	94	GROUP 10	Relocations	Relocations	Pump Station	(22 CFS 30" Pipeline At Well 7 To Existing Mowry Ranch Pipeline)	Clearing & Grubbing	87	6,126	3,445
7	95	GROUP 10	Relocations	Relocations	Pump Station	(22 CFS 30" Pipeline At Well 7 To Existing Mowry Ranch Pipeline)	Reinforced Concrete Pipe (30" RGRCP D-50 Pipe)	83	4,029	2,266
7	96	GROUP 10	Relocations	Relocations	Pump Station	(22 CFS 30" Pipeline At Well 7 To Existing Mowry Ranch Pipeline)	Pipe Trench Excavation (2:1 Side Slopes)	83	4,029	2,266

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
7	97	GROUP 10	Relocations	Relocations	Pump Station	(22 CFS 30" Pipeline At Well 7 To Existing Mowry Ranch Pipeline)	Pipe Bedding (CLSM To Depth Of 0.375D, Cement Sand Slurry)	81	3,070	1,727
7	98	GROUP 10	Relocations	Relocations	Pump Station	(22 CFS 30" Pipeline At Well 7 To Existing Mowry Ranch Pipeline)	Pipe Backfill & Compaction (6' Above Pipe)	86	5,320	2,992
7	99	GROUP 10	Relocations	Relocations	Pump Station	(22 CFS 30" Pipeline At Well 7 To Existing Mowry Ranch Pipeline)	Pipe Appurtenances	83	4,029	2,266
7	100	GROUP 10	Relocations	Relocations	Pump Station	(22 CFS 30" Pipeline At Well 7 To Existing Mowry Ranch Pipeline)	Dust Control	79	2,376	1,336
7	101	GROUP 10	Relocations	Relocations	Pump Station	(22 CFS 30" Pipeline At Well 7 To Existing Mowry Ranch Pipeline)	SWPPP	75	1,581	889
7	102	GROUP 10	Relocations	Relocations	Pump Station	(22 CFS 30" Pipeline At Well 7 To Existing Mowry Ranch Pipeline)	Worker Protection	82	3,529	1,984
7	104	GROUP 10	Relocations	Relocations	Pump Station	(16 CFS 24" Pipeline From Well 7 To Approx. Well 9)				
7	105	GROUP 10	Relocations	Relocations	Pump Station	(16 CFS 24" Pipeline From Well 7 To Approx. Well 9)	Clearing & Grubbing	87	6,126	3,445
7	106	GROUP 10	Relocations	Relocations	Pump Station	(16 CFS 24" Pipeline From Well 7 To Approx. Well 9)	Reinforced Concrete Pipe (24" RGRCP D-50 Pipe)	83	4,029	2,266
7	107	GROUP 10	Relocations	Relocations	Pump Station	(16 CFS 24" Pipeline From Well 7 To Approx. Well 9)	Pipe Trench Excavation (2:1 Side Slopes)	83	4,029	2,266
7	108	GROUP 10	Relocations	Relocations	Pump Station	(16 CFS 24" Pipeline From Well 7 To Approx. Well 9)	Pipe Bedding (CLSM To Depth Of 0.375D, Cement Sand Slurry)	81	3,070	1,727
7	109	GROUP 10	Relocations	Relocations	Pump Station	(16 CFS 24" Pipeline From Well 7 To Approx. Well 9)	Pipe Backfill & Compaction (6' Above Pipe)	86	5,320	2,992
7	110	GROUP 10	Relocations	Relocations	Pump Station	(16 CFS 24" Pipeline From Well 7 To Approx. Well 9)	Pipe Appurtenances	83	4,029	2,266
7	111	GROUP 10	Relocations	Relocations	Pump Station	(16 CFS 24" Pipeline From Well 7 To Approx. Well 9)	Dust Control	79	2,376	1,336
7	112	GROUP 10	Relocations	Relocations	Pump Station	(16 CFS 24" Pipeline From Well 7 To Approx. Well 9)	SWPPP	75	1,581	889
7	113	GROUP 10	Relocations	Relocations	Pump Station	(16 CFS 24" Pipeline From Well 7 To Approx. Well 9)	Worker Protection	82	3,529	1,984

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
7	114	GROUP 10	Relocations	Relocations	Pump Station	(16 CFS 24" Pipeline From Well 7 To Approx. Well 9)	Mobilization	80	2,963	1,666
7	116	GROUP 10	Relocations	Relocations	Pump Station	Site Preparation & Construction (2 Each Locations)				
7	117	GROUP 10	Relocations	Relocations	Pump Station	Site Preparation & Construction (2 Each Locations)	Clearing & Grubbing	87	6,126	3,445
7	118	GROUP 10	Relocations	Relocations	Pump Station	Site Preparation & Construction (2 Each Locations)	Earthwork (Loader & Truck)	88	6,698	3,766
7	119	GROUP 10	Relocations	Relocations	Pump Station	Site Preparation & Construction (2 Each Locations)	Revegetation	88	6,698	3,766
7	120	GROUP 10	Relocations	Relocations	Pump Station	Site Preparation & Construction (2 Each Locations)	Pull Pump & Column & Install After Modifications	83	4,029	2,266
7	121	GROUP 10	Relocations	Relocations	Pump Station	Site Preparation & Construction (2 Each Locations)	Column Extension	83	4,029	2,266
7	122	GROUP 10	Relocations	Relocations	Pump Station	Site Preparation & Construction (2 Each Locations)	Casing Extension	83	4,029	2,266
7	123	GROUP 10	Relocations	Relocations	Pump Station	Site Preparation & Construction (2 Each Locations)	Discharge Pipe Modifications	83	4,029	2,266
7	124	GROUP 10	Relocations	Relocations	Pump Station	Site Preparation & Construction (2 Each Locations)	Replace Electrical Panel	81	3,070	1,727
7	125	GROUP 10	Relocations	Relocations	Pump Station	Site Preparation & Construction (2 Each Locations)	PG&E Electrical Service	81	3,070	1,727
7	126	GROUP 10	Relocations	Relocations	Pump Station	Site Preparation & Construction (2 Each Locations)	Dust Control	79	2,376	1,336
7	127	GROUP 10	Relocations	Relocations	Pump Station	Site Preparation & Construction (2 Each Locations)	Mobilization	80	2,963	1,666
7	230	GROUP 11	Columbia Canal Company Relocation Facilities							
7	231	GROUP 11	Columbia Canal Company Relocation Facilities	USBR Main Columbia Pumping Plant - 250 CFS						
7	232	GROUP 11	Columbia Canal Company Relocation Facilities	USBR Main Columbia Pumping Plant - 250 CFS	Clearing & Grubbing			87	6,126	3,445

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
7	233	GROUP 11	Columbia Canal Company Relocation Facilities	USBR Main Columbia Pumping Plant - 250 CFS	Site Excavation			88	6,698	3,766
7	234	GROUP 11	Columbia Canal Company Relocation Facilities	USBR Main Columbia Pumping Plant - 250 CFS	Structure Backfill			88	6,698	3,766
7	235	GROUP 11	Columbia Canal Company Relocation Facilities	USBR Main Columbia Pumping Plant - 250 CFS	Structure Concrete			83	4,029	2,266
7	236	GROUP 11	Columbia Canal Company Relocation Facilities	USBR Main Columbia Pumping Plant - 250 CFS	Pumps & Motors (50 HP)			83	4,029	2,266
7	237	GROUP 11	Columbia Canal Company Relocation Facilities	USBR Main Columbia Pumping Plant - 250 CFS	Pump & Motor With VFD & Appurtenances (50 HP)			83	4,029	2,266
7	238	GROUP 11	Columbia Canal Company Relocation Facilities	USBR Main Columbia Pumping Plant - 250 CFS	Pumps & Motors (75 HP)			83	4,029	2,266
7	239	GROUP 11	Columbia Canal Company Relocation Facilities	USBR Main Columbia Pumping Plant - 250 CFS	Pump & Motor With VFD & Appurtenances (75 HP)			83	4,029	2,266
7	240	GROUP 11	Columbia Canal Company Relocation Facilities	USBR Main Columbia Pumping Plant - 250 CFS	Pump Control Building (16'x8')			80	2,963	1,666
7	241	GROUP 11	Columbia Canal Company Relocation Facilities	USBR Main Columbia Pumping Plant - 250 CFS	72" Steel Pipe			84	4,462	2,509
7	242	GROUP 11	Columbia Canal Company Relocation Facilities	USBR Main Columbia Pumping Plant - 250 CFS	36" Pump Discharge Assemblies			80	2,963	1,666
7	243	GROUP 11	Columbia Canal Company Relocation Facilities	USBR Main Columbia Pumping Plant - 250 CFS	Trashrack			83	4,029	2,266
7	244	GROUP 11	Columbia Canal Company Relocation Facilities	USBR Main Columbia Pumping Plant - 250 CFS	Miscellaneous Metals			83	4,029	2,266

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
7	245	GROUP 11	Columbia Canal Company Relocation Facilities	USBR Main Columbia Pumping Plant - 250 CFS	Excavate Ditch To Connect Pump Inlet To River Thalweg			88	6,698	3,766
7	246	GROUP 11	Columbia Canal Company Relocation Facilities	USBR Main Columbia Pumping Plant - 250 CFS	Flow Meter (Ultrasonic In Each Pipe Within Concrete Vault)			84	4,462	2,509
7	247	GROUP 11	Columbia Canal Company Relocation Facilities	USBR Main Columbia Pumping Plant - 250 CFS	Coffer Dam			103	38,638	21,728
7	248	GROUP 11	Columbia Canal Company Relocation Facilities	USBR Main Columbia Pumping Plant - 250 CFS	Dewatering Within Coffer Dam			83	4,029	2,266
7	249	GROUP 11	Columbia Canal Company Relocation Facilities	USBR Main Columbia Pumping Plant - 250 CFS	Dust Control			79	2,376	1,336
7	250	GROUP 11	Columbia Canal Company Relocation Facilities	USBR Main Columbia Pumping Plant - 250 CFS	SWPPP			75	1,581	889
7	251	GROUP 11	Columbia Canal Company Relocation Facilities	USBR Main Columbia Pumping Plant - 250 CFS	Worker Protection			82	3,529	1,984
7	253	GROUP 11	Columbia Canal Company Relocation Facilities	Siphon Under Compact Alignment (From Flow Meter To Outlet)	Clearing & Grubbing			87	6,126	3,445
7	254	GROUP 11	Columbia Canal Company Relocation Facilities	Siphon Under Compact Alignment (From Flow Meter To Outlet)	Reinforced Concrete Pipe (RCP) - Two 72" D-50 Pipes			83	4,029	2,266
7	255	GROUP 11	Columbia Canal Company Relocation Facilities	Siphon Under Compact Alignment (From Flow Meter To Outlet)	Reinforced Concrete Pipe (RCP) - 72" Bends			83	4,029	2,266
7	256	GROUP 11	Columbia Canal Company Relocation Facilities	Siphon Under Compact Alignment (From Flow Meter To Outlet)	Pipe Trench Excavation (2:1 Side Slopes)			83	4,029	2,266
7	257	GROUP 11	Columbia Canal Company Relocation Facilities	Siphon Under Compact Alignment (From Flow Meter To Outlet)	Pipe Bedding (CLSM To Depth Of 0.5D, Cement Sand Slurry)			81	3,070	1,727

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
7	258	GROUP 11	Columbia Canal Company Relocation Facilities	Siphon Under Compact Alignment (From Flow Meter To Outlet)	Pipe Backfill & Compaction (15' Above Pipe)			86	5,320	2,992
7	259	GROUP 11	Columbia Canal Company Relocation Facilities	Siphon Under Compact Alignment (From Flow Meter To Outlet)	Dust Control			79	2,376	1,336
7	260	GROUP 11	Columbia Canal Company Relocation Facilities	Siphon Under Compact Alignment (From Flow Meter To Outlet)	SWPPP			75	1,581	889
7	261	GROUP 11	Columbia Canal Company Relocation Facilities	Siphon Under Compact Alignment (From Flow Meter To Outlet)	Worker Protection			82	3,529	1,984
7	262	GROUP 11	Columbia Canal Company Relocation Facilities	USBR Main Columbia Pumping Plant Outlet Structures						
7	263	GROUP 11	Columbia Canal Company Relocation Facilities	USBR Main Columbia Pumping Plant Outlet Structures	Clearing & Grubbing			87	6,126	3,445
7	264	GROUP 11	Columbia Canal Company Relocation Facilities	USBR Main Columbia Pumping Plant Outlet Structures	Structure Backfill			88	6,698	3,766
7	265	GROUP 11	Columbia Canal Company Relocation Facilities	USBR Main Columbia Pumping Plant Outlet Structures	Structure Concrete (Check Structure & Headwalls)			83	4,029	2,266
7	266	GROUP 11	Columbia Canal Company Relocation Facilities	USBR Main Columbia Pumping Plant Outlet Structures	72" Gate			83	4,029	2,266
7	267	GROUP 11	Columbia Canal Company Relocation Facilities	USBR Main Columbia Pumping Plant Outlet Structures	Riprap Facing Class Purchase, 100 LB/CF, 2' Deep			83	4,029	2,266
7	268	GROUP 11	Columbia Canal Company Relocation Facilities	USBR Main Columbia Pumping Plant Outlet Structures	Rock Riprap Approaches / Outfalls & Side Slope Protection, 2' Deep			83	4,029	2,266
7	269	GROUP 11	Columbia Canal Company Relocation Facilities	USBR Main Columbia Pumping Plant Outlet Structures	Dust Control			79	2,376	1,336

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
7	270	GROUP 11	Columbia Canal Company Relocation Facilities	USBR Main Columbia Pumping Plant Outlet Structures	SWPPP			75	1,581	889
7	271	GROUP 11	Columbia Canal Company Relocation Facilities	USBR Main Columbia Pumping Plant Outlet Structures	Worker Protection			82	3,529	1,984
7	273	GROUP 11	Columbia Canal Company Relocation Facilities	Raising Columbia Canal 5' From Proposed Headworks Back To Old Headworks	Clearing & Grubbing			87	6,126	3,445
7	274	GROUP 11	Columbia Canal Company Relocation Facilities	Raising Columbia Canal 5' From Proposed Headworks Back To Old Headworks	Demolish Old Pump Structure, Flume, & Disposal			87	6,126	3,445
7	275	GROUP 11	Columbia Canal Company Relocation Facilities	Raising Columbia Canal 5' From Proposed Headworks Back To Old Headworks	Onsite Excavation			88	6,698	3,766
7	276	GROUP 11	Columbia Canal Company Relocation Facilities	Raising Columbia Canal 5' From Proposed Headworks Back To Old Headworks	Loader / Excavator & Truck For Material (Compacted Vol + 20%)			88	6,698	3,766
7	277	GROUP 11	Columbia Canal Company Relocation Facilities	Raising Columbia Canal 5' From Proposed Headworks Back To Old Headworks	Haul Truck (Less Than 20 Miles, Compacted Vol + 20%)			88	6,698	3,766
7	278	GROUP 11	Columbia Canal Company Relocation Facilities	Raising Columbia Canal 5' From Proposed Headworks Back To Old Headworks	Earthwork Fill & Compaction			88	6,698	3,766
7	279	GROUP 11	Columbia Canal Company Relocation Facilities	Raising Columbia Canal 5' From Proposed Headworks Back To Old Headworks	Canal Lining At 6" Thick			83	4,029	2,266
7	280	GROUP 11	Columbia Canal Company Relocation Facilities	Raising Columbia Canal 5' From Proposed Headworks Back To Old Headworks	Purchasing & Hauling Gravel For Roadway, 100 LB/CF			86	5,617	3,159
7	281	GROUP 11	Columbia Canal Company Relocation Facilities	Raising Columbia Canal 5' From Proposed Headworks Back To Old Headworks	Gravel Placement, New Road, 6" Thick, 4,000 LF On Both Banks			88	6,698	3,766
7	282	GROUP 11	Columbia Canal Company Relocation Facilities	Raising Columbia Canal 5' From Proposed Headworks Back To Old Headworks	Structure Concrete (Check Structure)			83	4,029	2,266

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
7	283	GROUP 11	Columbia Canal Company Relocation Facilities	Raising Columbia Canal 5' From Proposed Headworks Back To Old Headworks	Dust Control			79	2,376	1,336
7	284	GROUP 11	Columbia Canal Company Relocation Facilities	Raising Columbia Canal 5' From Proposed Headworks Back To Old Headworks	SWPPP			75	1,581	889
7	285	GROUP 11	Columbia Canal Company Relocation Facilities	Raising Columbia Canal 5' From Proposed Headworks Back To Old Headworks	Worker Protection			82	3,529	1,984
7	286	GROUP 11	Columbia Canal Company Relocation Facilities	Raising Columbia Canal 5' From Proposed Headworks Back To Old Headworks	Mobilization			80	2,963	1,666
7	435	GROUP 12	Relocations SJR Bypass Canal South Option							
7	436	GROUP 12	Relocations SJR Bypass Canal South Option	Canal						
7	437	GROUP 12	Relocations SJR Bypass Canal South Option	Canal	Canal Relocations			88	6,698	3,766
7	438	GROUP 12	Relocations SJR Bypass Canal South Option	Canal	Mobilization			80	2,963	1,666
7	439	GROUP 12	Relocations SJR Bypass Canal South Option	Utilities						
7	440	GROUP 12	Relocations SJR Bypass Canal South Option	Utilities	Overhead Electrical Distribution Removal & Replacement			83	4,029	2,266
7	441	GROUP 12	Relocations SJR Bypass Canal South Option	Utilities	Mobilization			80	2,963	1,666
7	442	GROUP 12	Relocations SJR Bypass Canal South Option	Pump Station						
7	443	GROUP 12	Relocations SJR Bypass Canal South Option	Pump Station	General Pump Station Site Preparation & Construction (2 Each Locations)					
7	444	GROUP 12	Relocations SJR Bypass Canal South Option	Pump Station	General Pump Station Site Preparation & Construction (2 Each Locations)	Clearing & Grubbing		87	6,126	3,445

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
7	445	GROUP 12	Relocations SJR Bypass Canal South Option	Pump Station	General Pump Station Site Preparation & Construction (2 Each Locations)	Canal/Drain Relocation		88	6,698	3,766
7	446	GROUP 12	Relocations SJR Bypass Canal South Option	Pump Station	General Pump Station Site Preparation & Construction (2 Each Locations)	Concrete Lining (Intake & Outfall)		83	4,029	2,266
7	447	GROUP 12	Relocations SJR Bypass Canal South Option	Pump Station	General Pump Station Site Preparation & Construction (2 Each Locations)	Rock Riprap At Outfall		83	4,029	2,266
7	448	GROUP 12	Relocations SJR Bypass Canal South Option	Pump Station	General Pump Station Site Preparation & Construction (2 Each Locations)	Pump & Sump Relocation		83	4,029	2,266
7	449	GROUP 12	Relocations SJR Bypass Canal South Option	Pump Station	General Pump Station Site Preparation & Construction (2 Each Locations)	Replace Electrical Panel		81	3,070	1,727
7	450	GROUP 12	Relocations SJR Bypass Canal South Option	Pump Station	General Pump Station Site Preparation & Construction (2 Each Locations)	PG&E Electrical Service		81	3,070	1,727
7	451	GROUP 12	Relocations SJR Bypass Canal South Option	Pump Station	General Pump Station Site Preparation & Construction (2 Each Locations)	12" Steel Pipe		83	4,029	2,266
7	452	GROUP 12	Relocations SJR Bypass Canal South Option	Pump Station	General Pump Station Site Preparation & Construction (2 Each Locations)	Dust Control		79	2,376	1,336
7	453	GROUP 12	Relocations SJR Bypass Canal South Option	Pump Station	General Pump Station Site Preparation & Construction (2 Each Locations)	Worker Protection		82	3,529	1,984
7	454	GROUP 12	Relocations SJR Bypass Canal South Option	Pump Station	General Pump Station Site Preparation & Construction (2 Each Locations)	Mobilization		80	2,963	1,666
7	455	GROUP 12	Relocations SJR Bypass Canal South Option	Deep Well Floodproofing						
7	456	GROUP 12	Relocations SJR Bypass Canal South Option	Deep Well Floodproofing	Site Preparation & Construction (2 Each Locations)					
7	457	GROUP 12	Relocations SJR Bypass Canal South Option	Deep Well Floodproofing	Site Preparation & Construction (2 Each Locations)	Clearing & Grubbing		87	6,126	3,445

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
7	458	GROUP 12	Relocations SJR Bypass Canal South Option	Deep Well Floodproofing	Site Preparation & Construction (2 Each Locations)	Earthwork (Loader & Truck)		88	6,698	3,766
7	459	GROUP 12	Relocations SJR Bypass Canal South Option	Deep Well Floodproofing	Site Preparation & Construction (2 Each Locations)	Revegetation		88	6,698	3,766
7	460	GROUP 12	Relocations SJR Bypass Canal South Option	Deep Well Floodproofing	Site Preparation & Construction (2 Each Locations)	Pull Pump & Column and Reinstall After Modifications		83	4,029	2,266
7	461	GROUP 12	Relocations SJR Bypass Canal South Option	Deep Well Floodproofing	Site Preparation & Construction (2 Each Locations)	Column Extension		83	4,029	2,266
7	462	GROUP 12	Relocations SJR Bypass Canal South Option	Deep Well Floodproofing	Site Preparation & Construction (2 Each Locations)	Casing Extension		83	4,029	2,266
7	463	GROUP 12	Relocations SJR Bypass Canal South Option	Deep Well Floodproofing	Site Preparation & Construction (2 Each Locations)	Discharge Pipe Modifications		83	4,029	2,266
7	464	GROUP 12	Relocations SJR Bypass Canal South Option	Deep Well Floodproofing	Site Preparation & Construction (2 Each Locations)	Replace Electrical Panel		81	3,070	1,727
7	465	GROUP 12	Relocations SJR Bypass Canal South Option	Deep Well Floodproofing	Site Preparation & Construction (2 Each Locations)	PG&E Electrical Service		81	3,070	1,727
7	466	GROUP 12	Relocations SJR Bypass Canal South Option	Deep Well Floodproofing	Site Preparation & Construction (2 Each Locations)	Dust Control		79	2,376	1,336
7	467	GROUP 12	Relocations SJR Bypass Canal South Option	Deep Well Floodproofing	Site Preparation & Construction (2 Each Locations)	Mobilization		80	2,963	1,666
7	320	GROUP 13	Fish Ladder and Supplemental Intake Structure	Fish Ladder and Supplemental Intake Structure						
7	321	GROUP 13	Fish Ladder and Supplemental Intake Structure	Fish Ladder and Supplemental Intake Structure	Concrete			83	4,029	2,266
7	322	GROUP 13	Fish Ladder and Supplemental Intake Structure	Fish Ladder and Supplemental Intake Structure	Reinforcing Steel			83	4,029	2,266
7	323	GROUP 13	Fish Ladder and Supplemental Intake Structure	Fish Ladder and Supplemental Intake Structure	Steel Grating			83	4,029	2,266
7	324	GROUP 13	Fish Ladder and Supplemental Intake Structure	Fish Ladder and Supplemental Intake Structure	Steel Slide Compression Gate			83	4,029	2,266
7	325	GROUP 13	Fish Ladder and Supplemental Intake Structure	Fish Ladder and Supplemental Intake Structure	Adjustable Steel Slot Weir			83	4,029	2,266
7	326	GROUP 13	Fish Ladder and Supplemental Intake Structure	Fish Ladder and Supplemental Intake Structure	Steel Slide Compression Gate for Pipe Diversion			83	4,029	2,266

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
7	327	GROUP 13	Fish Ladder and Supplemental Intake Structure	Fish Ladder and Supplemental Intake Structure	Steel Slide Compression Gate for Supplim. Flow Pipe			83	4,029	2,266
7	328	GROUP 13	Fish Ladder and Supplemental Intake Structure	Fish Ladder and Supplemental Intake Structure	Fish Screen			83	4,029	2,266
7	329	GROUP 13	Fish Ladder and Supplemental Intake Structure	Fish Ladder and Supplemental Intake Structure	Trash Rack			83	4,029	2,266
7	330	GROUP 13	Fish Ladder and Supplemental Intake Structure	Fish Ladder and Supplemental Intake Structure	Automated Trash Rack Screen Cleaner			83	4,029	2,266
7	331	GROUP 13	Fish Ladder and Supplemental Intake Structure	Fish Ladder and Supplemental Intake Structure	Steel Slide Gate Operator Control			83	4,029	2,266
7	332	GROUP 13	Fish Ladder and Supplemental Intake Structure	Fish Ladder and Supplemental Intake Structure	60" Diameter Steel Pipe			83	4,029	2,266
7	333	GROUP 13	Fish Ladder and Supplemental Intake Structure	Fish Ladder and Supplemental Intake Structure	84" Diameter Steel Pipe			84	4,462	2,509
7	334	GROUP 13	Fish Ladder and Supplemental Intake Structure	Fish Ladder and Supplemental Intake Structure	Mobilization			80	2,963	1,666
7	468	GROUP 14	Fresno Slough Dam							
7	469	GROUP 14	Fresno Slough Dam	SJR Control Structure						
7	470	GROUP 14	Fresno Slough Dam	SJR Control Structure	Stage 1 - SJR Control & 1/2 Connection Embankment					
7	471	GROUP 14	Fresno Slough Dam	SJR Control Structure	Stage 1 - SJR Control & 1/2 Connection Embankment	Clearing & Grubbing		87	6,126	3,445
7	472	GROUP 14	Fresno Slough Dam	SJR Control Structure	Stage 1 - SJR Control & 1/2 Connection Embankment	Cofferdam		103	38,638	21,728
7	473	GROUP 14	Fresno Slough Dam	SJR Control Structure	Stage 1 - SJR Control & 1/2 Connection Embankment	Cofferdam Removal		103	38,638	21,728
7	474	GROUP 14	Fresno Slough Dam	SJR Control Structure	Stage 1 - SJR Control & 1/2 Connection Embankment	Cut-Off Wall (Sheet Piles)		103	38,638	21,728
7	475	GROUP 14	Fresno Slough Dam	SJR Control Structure	Stage 1 - SJR Control & 1/2 Connection Embankment	Dewatering		83	4,029	2,266
7	476	GROUP 14	Fresno Slough Dam	SJR Control Structure	Stage 1 - SJR Control & 1/2 Connection Embankment	Excavation To Stockpile		88	6,698	3,766
7	477	GROUP 14	Fresno Slough Dam	SJR Control Structure	Stage 1 - SJR Control & 1/2 Connection Embankment	Excavation To Disposal Off Site		88	6,698	3,766

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
7	478	GROUP 14	Fresno Slough Dam	SJR Control Structure	Stage 1 - SJR Control & 1/2 Connection Embankment	Gravel Base		88	6,698	3,766
7	479	GROUP 14	Fresno Slough Dam	SJR Control Structure	Stage 1 - SJR Control Structure					
7	480	GROUP 14	Fresno Slough Dam	SJR Control Structure	Stage 1 - SJR Control Structure	12" Square Concrete Piles		103	38,638	21,728
7	481	GROUP 14	Fresno Slough Dam	SJR Control Structure	Stage 1 - SJR Control Structure	Concrete		83	4,029	2,266
7	482	GROUP 14	Fresno Slough Dam	SJR Control Structure	Stage 1 - SJR Control Structure	Reinforcing Steel		83	4,029	2,266
7	483	GROUP 14	Fresno Slough Dam	SJR Control Structure	Stage 1 - SJR Control Structure	Carbon/Galvanized Steel		83	4,029	2,266
7	484	GROUP 14	Fresno Slough Dam	SJR Control Structure	Stage 1 - SJR Control Structure	Stainless Steel		83	4,029	2,266
7	485	GROUP 14	Fresno Slough Dam	SJR Control Structure	Stage 1 - SJR Control Structure	Pipe Handrail		83	4,029	2,266
7	486	GROUP 14	Fresno Slough Dam	SJR Control Structure	Stage 1 - SJR Control Structure	Guardrail		83	4,029	2,266
7	487	GROUP 14	Fresno Slough Dam	SJR Control Structure	Stage 1 - SJR Control Radial Gates					
7	488	GROUP 14	Fresno Slough Dam	SJR Control Structure	Stage 1 - SJR Control Radial Gates	Tainter Gate Steel		83	4,029	2,266
7	489	GROUP 14	Fresno Slough Dam	SJR Control Structure	Stage 1 - SJR Control Radial Gates	Motor Operated Hoist W/Wire Ropes		83	4,029	2,266
7	490	GROUP 14	Fresno Slough Dam	SJR Control Structure	Stage 1 - SJR Control Radial Gates	Trash Rack - Miscellaneous Steel		83	4,029	2,266
7	491	GROUP 14	Fresno Slough Dam	SJR Control Structure	Stage 1 - SJR Control Radial Gates	Trash Rack - Stainless Steel		83	4,029	2,266
7	492	GROUP 14	Fresno Slough Dam	SJR Control Structure	Stage 1 - SJR Control Radial Gates	Trash Rack - Nelson Studs		83	4,029	2,266
7	493	GROUP 14	Fresno Slough Dam	SJR Control Structure	Stage 1 - SJR Control Radial Gates	Trashrake Units		83	4,029	2,266
7	494	GROUP 14	Fresno Slough Dam	SJR Control Structure	Stage 1 - SJR Control Radial Gates	Trashrake - Structure Support Steel		83	4,029	2,266
7	495	GROUP 14	Fresno Slough Dam	SJR Control Structure	Stage 1 - SJR Control Radial Gates	Rock Slope Protection		83	4,029	2,266
7	496	GROUP 14	Fresno Slough Dam	SJR Control Structure	Stage 1 - 1/2 Connection Embankment					
7	497	GROUP 14	Fresno Slough Dam	SJR Control Structure	Stage 1 - 1/2 Connection Embankment	Compacted Embankment - From Stockpile		88	6,698	3,766
7	498	GROUP 14	Fresno Slough Dam	SJR Control Structure	Stage 1 - 1/2 Connection Embankment	Compacted Embankment - Core Material		88	6,698	3,766
7	499	GROUP 14	Fresno Slough Dam	SJR Control Structure	Stage 1 - 1/2 Connection Embankment	Geotextile Fabric		80	2,963	1,666
7	500	GROUP 14	Fresno Slough Dam	SJR Control Structure	Stage 1 - 1/2 Connection Embankment	9" Bedding		84	4,337	2,439

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
7	501	GROUP 14	Fresno Slough Dam	SJR Control Structure	Stage 1 - 1/2 Connection Embankment	Stone Slope Protection, Type 1		83	4,029	2,266
7	502	GROUP 14	Fresno Slough Dam	SJR Control Structure	Stage 1 - 1/2 Connection Embankment	Access Road (4" AC / 6" AB, 24' Wide)		88	6,698	3,766
7	503	GROUP 14	Fresno Slough Dam	SJR Control Structure	Stage 1 - 1/2 Connection Embankment	Chain Link Fence W/Barbed Wire		80	2,963	1,666
7	504	GROUP 14	Fresno Slough Dam	SJR Control Structure	Stage 1 - 1/2 Connection Embankment	Automatic Entrance Gate		81	3,070	1,727
7	505	GROUP 14	Fresno Slough Dam	SJR Control Structure	Stage 2 - Wing Embankment					
7	506	GROUP 14	Fresno Slough Dam	SJR Control Structure	Stage 2 - Wing Embankment	Compacted Embankment From Stockpile		88	6,698	3,766
7	507	GROUP 14	Fresno Slough Dam	SJR Control Structure	Stage 2 - Wing Embankment	Compacted Embankment - Core Material		88	6,698	3,766
7	508	GROUP 14	Fresno Slough Dam	SJR Control Structure	Stage 2 - Wing Embankment	Geotextile Fabric		80	2,963	1,666
7	509	GROUP 14	Fresno Slough Dam	SJR Control Structure	Stage 2 - Wing Embankment	9" Bedding		84	4,337	2,439
7	510	GROUP 14	Fresno Slough Dam	SJR Control Structure	Stage 2 - Wing Embankment	Stone Slope Protection, Type 1		83	4,029	2,266
7	511	GROUP 14	Fresno Slough Dam	SJR Control Structure	Stage 2 - Wing Embankment	Access Road (4" AC / 6" AB, 24' Wide)		88	6,698	3,766
7	512	GROUP 14	Fresno Slough Dam	SJR Control Structure	Stage 2 - Wing Embankment	Chain Link Fence W/Barbed Wire		80	2,963	1,666
7	513	GROUP 14	Fresno Slough Dam	SJR Control Structure	Stage 2 - Wing Embankment	Automatic Entrance Gate		81	3,070	1,727
7	514	GROUP 14	Fresno Slough Dam	SJR Control Structure	Stage 2 - Wing Embankment	Mobilization		80	2,963	1,666
7	515	GROUP 14	Fresno Slough Dam	SJR Control Structure	Fish Ladder Preparation					
7	516	GROUP 14	Fresno Slough Dam	SJR Control Structure	Fish Ladder Preparation	Clearing & Grubbing		87	6,126	3,445
7	517	GROUP 14	Fresno Slough Dam	SJR Control Structure	Fish Ladder Preparation	Cofferdam		103	38,638	21,728
7	518	GROUP 14	Fresno Slough Dam	SJR Control Structure	Fish Ladder Preparation	Cofferdam Removal		103	38,638	21,728
7	519	GROUP 14	Fresno Slough Dam	SJR Control Structure	Fish Ladder Preparation	Cut-Off Wall (Sheet Piles)		103	38,638	21,728
7	520	GROUP 14	Fresno Slough Dam	SJR Control Structure	Fish Ladder Preparation	Dewatering		83	4,029	2,266
7	521	GROUP 14	Fresno Slough Dam	SJR Control Structure	Fish Ladder Preparation	Excavation To Stockpile		88	6,698	3,766
7	522	GROUP 14	Fresno Slough Dam	SJR Control Structure	Fish Ladder Preparation	Excavation To Disposal Off Site		88	6,698	3,766
7	523	GROUP 14	Fresno Slough Dam	SJR Control Structure	Fish Ladder Preparation	Gravel Base		88	6,698	3,766
7	524	GROUP 14	Fresno Slough Dam	SJR Control Structure	Fish Ladder & Supplemental Intake Structure					

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
7	525	GROUP 14	Fresno Slough Dam	SJR Control Structure	Fish Ladder & Supplemental Intake Structure	Concrete		83	4,029	2,266
7	526	GROUP 14	Fresno Slough Dam	SJR Control Structure	Fish Ladder & Supplemental Intake Structure	Reinforcing Steel		83	4,029	2,266
7	527	GROUP 14	Fresno Slough Dam	SJR Control Structure	Fish Ladder & Supplemental Intake Structure	Steel Grating		83	4,029	2,266
7	528	GROUP 14	Fresno Slough Dam	SJR Control Structure	Fish Ladder & Supplemental Intake Structure	Steel Slide Compression Gate		83	4,029	2,266
7	529	GROUP 14	Fresno Slough Dam	SJR Control Structure	Fish Ladder & Supplemental Intake Structure	Adjustable Steel Slot Weir		83	4,029	2,266
7	530	GROUP 14	Fresno Slough Dam	SJR Control Structure	Fish Ladder & Supplemental Intake Structure	Steel Slide Compression Gate for Pipe Diversion		83	4,029	2,266
7	531	GROUP 14	Fresno Slough Dam	SJR Control Structure	Fish Ladder & Supplemental Intake Structure	Steel Slide Compression Gate for Supplim. Flow Pipe		83	4,029	2,266
7	532	GROUP 14	Fresno Slough Dam	SJR Control Structure	Fish Ladder & Supplemental Intake Structure	Fish Screen		83	4,029	2,266
7	533	GROUP 14	Fresno Slough Dam	SJR Control Structure	Fish Ladder & Supplemental Intake Structure	Trash Rack		83	4,029	2,266
7	534	GROUP 14	Fresno Slough Dam	SJR Control Structure	Fish Ladder & Supplemental Intake Structure	Automated Trash Rack Screen Cleaner		83	4,029	2,266
7	535	GROUP 14	Fresno Slough Dam	SJR Control Structure	Fish Ladder & Supplemental Intake Structure	Steel Slide Gate Operator Control		81	3,070	1,727
7	536	GROUP 14	Fresno Slough Dam	SJR Control Structure	Fish Ladder & Supplemental Intake Structure	60" Steel Pipe		83	4,029	2,266
7	537	GROUP 14	Fresno Slough Dam	SJR Control Structure	Fish Ladder & Supplemental Intake Structure	84" Steel Pipe		83	4,029	2,266
7	538	GROUP 14	Fresno Slough Dam	SJR Control Structure	Fish Ladder & Supplemental Intake Structure	Mobilization		80	2,963	1,666
7	539	GROUP 15	Fresno Slough Dam							
7	540	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen						
7	541	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Fish Screen Earthwork					

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
7	542	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Fish Screen Earthwork	Clearing & Grubbing		87	6,126	3,445
7	543	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Fish Screen Earthwork	Cofferdam		103	38,638	21,728
7	544	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Fish Screen Earthwork	Cofferdam Removal		103	38,638	21,728
7	545	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Fish Screen Earthwork	Cut-Off Wall (Sheet Piles)		103	38,638	21,728
7	546	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Fish Screen Earthwork	Dewatering		83	4,029	2,266
7	547	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Fish Screen Earthwork	Excavation To Stockpile		88	6,698	3,766
7	548	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Fish Screen Earthwork	Excavation To Disposal Off Site		88	6,698	3,766
7	549	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Fish Screen Earthwork	Gravel Base		88	6,698	3,766
7	550	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Fish Screen Structure					
7	551	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Fish Screen Structure	Concrete		83	4,029	2,266
7	552	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Fish Screen Structure	Reinforcing Steel		83	4,029	2,266
7	553	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Fish Screen Structure	Miscellaneous Metals		83	4,029	2,266
7	554	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Fish Screen Structure	Steel Members		83	4,029	2,266
7	555	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Fish Screen Structure	Fish Screen		83	4,029	2,266
7	556	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Fish Screen Structure	Adjustable Baffles		83	4,029	2,266
7	557	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Fish Screen Structure	Automated Screen Brush Cleaners		83	4,029	2,266
7	558	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Fish Screen Structure	Scour Protection		83	4,029	2,266

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
7	559	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Fish Screen Structure	Electric Winches For Vertical Slide Gates		83	4,029	2,266
7	560	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Connection Embankments For Fish Screen					
7	561	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Connection Embankments For Fish Screen	Compacted Embankment - From Stockpile		88	6,698	3,766
7	562	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Connection Embankments For Fish Screen	Compacted Embankment - Core Material		88	6,698	3,766
7	563	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Connection Embankments For Fish Screen	Geotextile Fabric		80	2,963	1,666
7	564	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Connection Embankments For Fish Screen	9" Bedding		84	4,337	2,439
7	565	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Connection Embankments For Fish Screen	Stone Slope Protection, Type 1		83	4,029	2,266
7	566	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Connection Embankments For Fish Screen	Access Road (4" AC / 6" AB, 24' Wide)		88	6,698	3,766
7	567	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Connection Embankments For Fish Screen	Chain Link Fence W/Barbed Wire		80	2,963	1,666
7	568	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Connection Embankments For Fish Screen	Automatic Entrance Gate		81	3,070	1,727
7	569	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Fish Screen Outlet Structure					
7	570	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Fish Screen Outlet Structure	Concrete		83	4,029	2,266
7	571	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Fish Screen Outlet Structure	Reinforcing Steel		83	4,029	2,266
7	572	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Fish Screen Outlet Structure	48" Steel Pipe		83	4,029	2,266
7	573	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Fish Screen Outlet Structure	Mobilization		80	2,963	1,666
7	574	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Bypass Channel Control Structure					
7	575	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Bypass Channel Control Structure	Clearing & Grubbing		87	6,126	3,445

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
7	576	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Bypass Channel Control Structure	Excavation To Stockpile		88	6,698	3,766
7	577	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Bypass Channel Control Structure	Excavation To Disposal Off Site		88	6,698	3,766
7	578	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Bypass Channel Control Structure	Cut-Off Wall (Sheet Piles)		103	38,638	21,728
7	579	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Bypass Channel Control Structure					
7	580	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Bypass Channel Control Structure	12" Square Concrete Piles		103	38,638	21,728
7	581	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Bypass Channel Control Structure	Concrete		83	4,029	2,266
7	582	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Bypass Channel Control Structure	Reinforcing Steel		83	4,029	2,266
7	583	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Bypass Channel Control Structure	Carbon/Galvanized Steel		83	4,029	2,266
7	584	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Bypass Channel Control Structure	Stainless Steel		83	4,029	2,266
7	585	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Bypass Channel Control Structure	Pipe Handrail		83	4,029	2,266
7	586	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Bypass Channel Control Structure	Guardrail		83	4,029	2,266
7	587	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Bypass Control Radial Gates					
7	588	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Bypass Control Radial Gates	Tainter Gate Steel		83	4,029	2,266
7	589	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Bypass Control Radial Gates	Motor Operated Hoist W/Wire Ropes		83	4,029	2,266
7	590	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Bypass Control Radial Gates	Trash Rack - Miscellaneous Steel		83	4,029	2,266
7	591	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Bypass Control Radial Gates	Trash Rack - Stainless Steel		83	4,029	2,266
7	592	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Bypass Control Radial Gates	Trash Rack - Nelson Suds		83	4,029	2,266

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
7	593	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Bypass Control Radial Gates	Trashrake Units		83	4,029	2,266
7	594	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Bypass Control Radial Gates	Trashrake - Structural Support Steel		83	4,029	2,266
7	595	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Bypass Control Radial Gates	Rock Slope Protection		83	4,029	2,266
7	596	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Bypass Control Embankments					
7	597	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Bypass Control Embankments	Compacted Embankment - From Stockpile		88	6,698	3,766
7	598	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Bypass Control Embankments	Compacted Embankment - Core Material		88	6,698	3,766
7	599	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Bypass Control Embankments	Access Road (4" AC / 6" AB, 24' Wide)		88	6,698	3,766
7	600	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Bypass Control Embankments	Chain Link Fence W/Barbed Wire		80	2,963	1,666
7	601	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Bypass Control Embankments	Automated Entrance Gate		81	3,070	1,727
7	602	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Bypass Control Embankments	Mobilization		80	2,963	1,666
7	167	GROUP 16	Vegetation & Irrigation							
7	168	GROUP 16	Vegetation & Irrigation	General Description						
7	169	GROUP 16	Vegetation & Irrigation	General Description	Plant Establishment (12 Months)			81	3,070	1,727
7	170	GROUP 16	Vegetation & Irrigation	General Description	Landscape Maintenance (12 Months Or As Needed)			81	3,070	1,727
7	171	GROUP 16	Vegetation & Irrigation	General Description	Agricultural Topsoil (6" Layer)			88	6,698	3,766
7	172	GROUP 16	Vegetation & Irrigation	General Description	Erosion Control Fabric			80	2,963	1,666
7	173	GROUP 16	Vegetation & Irrigation	General Description	Irrigation System			81	3,070	1,727
7	174	GROUP 16	Vegetation & Irrigation	General Description	Beaver Fence			80	2,963	1,666
7	175	GROUP 16	Vegetation & Irrigation	General Description	Seeding			88	6,698	3,766
7	176	GROUP 16	Vegetation & Irrigation	General Description	Pole Cuttings			80	2,963	1,666

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
7	177	GROUP 16	Vegetation & Irrigation	General Description	Fascine Bundle			80	2,963	1,666
7	178	GROUP 16	Vegetation & Irrigation	General Description	Instream Woody Material			80	2,963	1,666
7	182	GROUP 16	Vegetation & Irrigation	General Description	Treepot Installation T4 - Cbm			81	3,070	1,727
7	183	GROUP 16	Vegetation & Irrigation	General Description	Treepot Installation DP - Cmb			81	3,070	1,727
7	184	GROUP 16	Vegetation & Irrigation	General Description	Treepot Installation DP - Crg			81	3,070	1,727
7	185	GROUP 16	Vegetation & Irrigation	General Description	Treepot Installation DP - Rbh			81	3,070	1,727
7	186	GROUP 16	Vegetation & Irrigation	General Description	Treepot Installation DP - Sgf			81	3,070	1,727
7	189	GROUP 16	Vegetation & Irrigation	General Description	Treepot Installation D6 - Swt			81	3,070	1,727
7	190	GROUP 16	Vegetation & Irrigation	General Description	Treepot Installation D6 - Bwt			81	3,070	1,727
7	191	GROUP 16	Vegetation & Irrigation	General Description	Mobilization			80	2,963	1,666
8	1	GROUP 1	MPB Channel							
8	2	GROUP 1	MPB Channel	Bypass Channel						
8	3	GROUP 1	MPB Channel	Bypass Channel	General					
8	4	GROUP 1	MPB Channel	Bypass Channel	General	Clearing & Grubbing		87	6,126	3,445
8	5	GROUP 1	MPB Channel	Bypass Channel	General	Water For Dust Abatement		79	2,376	1,336
8	6	GROUP 1	MPB Channel	Bypass Channel	Channel and Floodplain Excavation					
8	7	GROUP 1	MPB Channel	Bypass Channel	Channel and Floodplain Excavation	Course Channel Excavation (Scraper) & Local Haul		88	6,698	3,766
8	8	GROUP 1	MPB Channel	Bypass Channel	Channel and Floodplain Excavation	Course Channel Excavation (Loader & Dozer)		88	6,698	3,766
8	9	GROUP 1	MPB Channel	Bypass Channel	Channel and Floodplain Excavation	Fine Channel Excavation & Shaping (Excavator)		84	4,462	2,509
8	10	GROUP 1	MPB Channel	Bypass Channel	Channel and Floodplain Excavation	Haul Off Site (<20 Miles)		88	6,698	3,766
8	11	GROUP 1	MPB Channel	Bypass Channel	Channel and Floodplain Excavation	Floodplain Excavation (Scraper) & Local Haul		88	6,698	3,766
8	12	GROUP 1	MPB Channel	Bypass Channel	Channel and Floodplain Excavation	Floodplain Fill, Grading, & Compaction Between Levees		88	6,698	3,766
8	13	GROUP 1	MPB Channel	Bypass Channel	Channel and Floodplain Excavation	Revetment		87	6,126	3,445
8	14	GROUP 1	MPB Channel	Bypass Channel	Grade Control Structures					

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
8	15	GROUP 1	MPB Channel	Bypass Channel	Grade Control Structures	Single Wall, Anchored, Sheet Pipe Structures (9 Each Structures)				
8	16	GROUP 1	MPB Channel	Bypass Channel	Grade Control Structures	Single Wall, Anchored, Sheet Pipe Structures (9 Each Structures)	Clearing & Grubbing	87	6,126	3,445
8	17	GROUP 1	MPB Channel	Bypass Channel	Grade Control Structures	Single Wall, Anchored, Sheet Pipe Structures (9 Each Structures)	Onsite Earthwork For Anchor Systems (Remove & Recompact)	84	4,462	2,509
8	18	GROUP 1	MPB Channel	Bypass Channel	Grade Control Structures	Single Wall, Anchored, Sheet Pipe Structures (9 Each Structures)	Dewatering	83	4,029	2,266
8	20	GROUP 1	MPB Channel	Bypass Channel	Grade Control Structures	Single Wall, Anchored, Sheet Pipe Structures (9 Each Structures)	Deliver Materials (CMI Atlanta GA, 2 Trucks)	76	1,774	998
8	21	GROUP 1	MPB Channel	Bypass Channel	Grade Control Structures	Single Wall, Anchored, Sheet Pipe Structures (9 Each Structures)	Construct Driving Guide & Use As Wales	83	4,029	2,266
8	22	GROUP 1	MPB Channel	Bypass Channel	Grade Control Structures	Single Wall, Anchored, Sheet Pipe Structures (9 Each Structures)	Sheet Pile Installation (Single Sheet 20'x420')	103	38,638	21,728
8	23	GROUP 1	MPB Channel	Bypass Channel	Grade Control Structures	Single Wall, Anchored, Sheet Pipe Structures (9 Each Structures)	Caps For Tops (20' Lengths Material & Labor)	83	4,029	2,266
8	24	GROUP 1	MPB Channel	Bypass Channel	Grade Control Structures	Single Wall, Anchored, Sheet Pipe Structures (9 Each Structures)	Anchor Support System (Pilings, Cable, Wales, Etc)	83	4,029	2,266
8	25	GROUP 1	MPB Channel	Bypass Channel	Grade Control Structures	Single Wall, Anchored, Sheet Pipe Structures (9 Each Structures)	Dust Control	79	2,376	1,336
8	26	GROUP 1	MPB Channel	Bypass Channel	Other Costs					
8	27	GROUP 1	MPB Channel	Bypass Channel	Other Costs	SWPPP		75	1,581	889
8	28	GROUP 1	MPB Channel	Bypass Channel	Other Costs	Worker Protection		82	3,529	1,984
8	29	GROUP 1	MPB Channel	Bypass Channel	Other Costs	Mobilization		85	5,244	2,949
8	397	GROUP 2	Reach 3							
8	398	GROUP 2	Reach 3	Levee Removal						
8	399	GROUP 2	Reach 3	Levee Removal	Haul Excess material by truck < 20 miles			88	6,698	3,766
8	400	GROUP 2	Reach 3	Levee Preparation						
8	401	GROUP 2	Reach 3	Levee Preparation	Clearing & Grubbing			87	6,126	3,445
8	402	GROUP 2	Reach 3	Levee Preparation	Tree Removal			87	6,126	3,445
8	403	GROUP 2	Reach 3	New Levee						
8	404	GROUP 2	Reach 3	New Levee	Compacted Embankment			88	6,698	3,766
8	405	GROUP 2	Reach 3	New Levee	Slurry Wall (10 Percent Of Total Levee Length)			87	6,126	3,445

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
8	406	GROUP 2	Reach 3	New Levee	USACE Trench Foundation			88	6,698	3,766
8	407	GROUP 2	Reach 3	New Levee	Borrow Excavation and Haul			88	6,698	3,766
8	408	GROUP 2	Reach 3	General						
8	409	GROUP 2	Reach 3	General	Seeding (Levee Slopes)			88	6,698	3,766
8	410	GROUP 2	Reach 3	General	Ramps & Turnabouts			88	6,698	3,766
8	411	GROUP 2	Reach 3	General	Levee Aggregate Base Roadway			88	6,698	3,766
8	412	GROUP 2	Reach 3	General	Haul Excess Material By Truck < 20 Miles (Drainage Channel)			88	6,698	3,766
8	413	GROUP 2	Reach 3	Mobilization				80	2,963	1,666
8	30	GROUP 3	Levees	Levees						
8	31	GROUP 3	Levees	Levees	Levee Preparation					
8	32	GROUP 3	Levees	Levees	Levee Preparation	Clearing & Grubbing		87	6,126	3,445
8	33	GROUP 3	Levees	Levees	Levee Preparation	Tree Removal		87	6,126	3,445
8	34	GROUP 3	Levees	Levees	Right Setback Levee					
8	35	GROUP 3	Levees	Levees	Right Setback Levee	Compacted Embankment		88	6,698	3,766
8	36	GROUP 3	Levees	Levees	Right Setback Levee	Slurry Wall (10 Percent Of Total Levee Length)		87	6,126	3,445
8	37	GROUP 3	Levees	Levees	Right Setback Levee	USACE Trench Foundation		88	6,698	3,766
8	38	GROUP 3	Levees	Levees	Right Setback Levee	Borrow Excavation (< 1 Mile)		88	6,698	3,766
8	39	GROUP 3	Levees	Levees	Left Setback Levee					
8	40	GROUP 3	Levees	Levees	Left Setback Levee	Compacted Embankment		88	6,698	3,766
8	41	GROUP 3	Levees	Levees	Left Setback Levee	Slurry Wall (10 Percent Of Total Levee Length)		87	6,126	3,445
8	42	GROUP 3	Levees	Levees	Left Setback Levee	USACE Trench Foundation		88	6,698	3,766
8	43	GROUP 3	Levees	Levees	Left Setback Levee	Borrow Excavation (< 1 Mile)		88	6,698	3,766
8	44	GROUP 3	Levees	Levees	General					
8	45	GROUP 3	Levees	Levees	General	Seeding (Levee Slopes)		88	6,698	3,766
8	46	GROUP 3	Levees	Levees	General	Ramps & Turnabouts		88	6,698	3,766
8	47	GROUP 3	Levees	Levees	General	Right Levee Aggregate Base Roadway		88	6,698	3,766
8	48	GROUP 3	Levees	Levees	General	Left Levee Aggregate Base Roadway		88	6,698	3,766
8	49	GROUP 3	Levees	Levees	General	Haul Excess Material By Truck < 20 Miles (Drainage Channel)		85	5,113	2,875

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
8	50	GROUP 3	Levees	Levees	General	Mobilization		82	3,529	1,984
8	287	GROUP 4	Diversion Structure (Bypass Channel)	Diversion Structure (Bypass Channel)						
8	288	GROUP 4	Diversion Structure (Bypass Channel)	Diversion Structure (Bypass Channel)	Spillway Structure					
8	289	GROUP 4	Diversion Structure (Bypass Channel)	Diversion Structure (Bypass Channel)	Spillway Structure	Excavation For Spillway		88	6,698	3,766
8	290	GROUP 4	Diversion Structure (Bypass Channel)	Diversion Structure (Bypass Channel)	Spillway Structure	Compacted Backfill		88	6,698	3,766
8	291	GROUP 4	Diversion Structure (Bypass Channel)	Diversion Structure (Bypass Channel)	Spillway Structure	Cutoff Walls (Steel Sheet Piling)		103	38,638	21,728
8	292	GROUP 4	Diversion Structure (Bypass Channel)	Diversion Structure (Bypass Channel)	Spillway Structure	Precast prestressed concrete pile (14"x14"x20')		103	38,638	21,728
8	293	GROUP 4	Diversion Structure (Bypass Channel)	Diversion Structure (Bypass Channel)	Spillway Structure	Concrete		83	4,029	2,266
8	294	GROUP 4	Diversion Structure (Bypass Channel)	Diversion Structure (Bypass Channel)	Spillway Structure	Steel Reinforcement		83	4,029	2,266
8	295	GROUP 4	Diversion Structure (Bypass Channel)	Diversion Structure (Bypass Channel)	Spillway Structure	Waterstop		78	2,118	1,191
8	296	GROUP 4	Diversion Structure (Bypass Channel)	Diversion Structure (Bypass Channel)	Radial Gates					
8	297	GROUP 4	Diversion Structure (Bypass Channel)	Diversion Structure (Bypass Channel)	Radial Gates	6 Radial Gates (Each 20'x8')		83	4,029	2,266
8	298	GROUP 4	Diversion Structure (Bypass Channel)	Diversion Structure (Bypass Channel)	Radial Gates	Hoist (Motor Operated W/Wire Ropes)		83	4,029	2,266
8	299	GROUP 4	Diversion Structure (Bypass Channel)	Diversion Structure (Bypass Channel)	Radial Gates	Embedded Metal (Stainless Steel)		83	4,029	2,266
8	300	GROUP 4	Diversion Structure (Bypass Channel)	Diversion Structure (Bypass Channel)	Radial Gates	Steel Stoplogs 6 EA 21'x12' Deep Inc Ribs Etc		83	4,029	2,266
8	301	GROUP 4	Diversion Structure (Bypass Channel)	Diversion Structure (Bypass Channel)	Radial Gates	Railing On Top Deck		83	4,029	2,266
8	302	GROUP 4	Diversion Structure (Bypass Channel)	Diversion Structure (Bypass Channel)	Radial Gates	Railing On Bridge Deck		83	4,029	2,266
8	303	GROUP 4	Diversion Structure (Bypass Channel)	Diversion Structure (Bypass Channel)	Radial Gates	Riprap		83	4,029	2,266
8	304	GROUP 4	Diversion Structure (Bypass Channel)	Diversion Structure (Bypass Channel)	Radial Gates	Water Velocity & Flow Measurement System		81	3,070	1,727
8	305	GROUP 4	Diversion Structure (Bypass Channel)	Diversion Structure (Bypass Channel)	Radial Gates	Propane Tank & Enclosure (15'x20'x6' HCB)		80	2,963	1,666
8	306	GROUP 4	Diversion Structure (Bypass Channel)	Diversion Structure (Bypass Channel)	Radial Gates	Emergency Generator		82	3,529	1,984
8	307	GROUP 4	Diversion Structure (Bypass Channel)	Diversion Structure (Bypass Channel)	Dam Construction					
8	308	GROUP 4	Diversion Structure (Bypass Channel)	Diversion Structure (Bypass Channel)	Dam Construction	Excavation For Dam		83	4,029	2,266

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
8	309	GROUP 4	Diversion Structure (Bypass Channel)	Diversion Structure (Bypass Channel)	Dam Construction	Compacted Embankment - Impervious Fill		88	6,698	3,766
8	310	GROUP 4	Diversion Structure (Bypass Channel)	Diversion Structure (Bypass Channel)	Dam Construction	Compacted Embankment - Semipervious Fill		88	6,698	3,766
8	311	GROUP 4	Diversion Structure (Bypass Channel)	Diversion Structure (Bypass Channel)	Dam Construction	Compacted Embankment - Pervious Fill		88	6,698	3,766
8	312	GROUP 4	Diversion Structure (Bypass Channel)	Diversion Structure (Bypass Channel)	Dam Construction	Geotextile Fabric		80	2,963	1,666
8	313	GROUP 4	Diversion Structure (Bypass Channel)	Diversion Structure (Bypass Channel)	Dam Construction	9" Bedding		84	4,337	2,439
8	314	GROUP 4	Diversion Structure (Bypass Channel)	Diversion Structure (Bypass Channel)	Dam Construction	Stone Slope Protection, Type 1		83	4,029	2,266
8	315	GROUP 4	Diversion Structure (Bypass Channel)	Diversion Structure (Bypass Channel)	Dam Construction	Access Road (4" AC/6" AB, 24' Wide)		88	6,698	3,766
8	316	GROUP 4	Diversion Structure (Bypass Channel)	Diversion Structure (Bypass Channel)	Dam Construction	7' Chain Link Fence Including Barbed Wire		80	2,963	1,666
8	317	GROUP 4	Diversion Structure (Bypass Channel)	Diversion Structure (Bypass Channel)	Dam Construction	Pipe Handrail (On U/S & D/S Side Of Dam)		83	4,029	2,266
8	318	GROUP 4	Diversion Structure (Bypass Channel)	Diversion Structure (Bypass Channel)	Dam Construction	Automatic Entrance Gate (16' Wide)		81	3,070	1,727
8	319	GROUP 4	Diversion Structure (Bypass Channel)	Diversion Structure (Bypass Channel)	Dam Construction	Mobilization		80	2,963	1,666
8	335	GROUP 5	Diversion Structure (SJR)	Diversion Structure (SJR)						
8	336	GROUP 5	Diversion Structure (SJR)	Diversion Structure (SJR)	Spillway Structure					
8	337	GROUP 5	Diversion Structure (SJR)	Diversion Structure (SJR)	Spillway Structure	Coffer Dam (Steel Sheet Piling Inc Bracing)		103	38,638	21,728
8	338	GROUP 5	Diversion Structure (SJR)	Diversion Structure (SJR)	Spillway Structure	Coffer Dam (Filling With Dirt & Removal)		103	38,638	21,728
8	339	GROUP 5	Diversion Structure (SJR)	Diversion Structure (SJR)	Spillway Structure	Dewatering (8 Months)		83	4,029	2,266
8	340	GROUP 5	Diversion Structure (SJR)	Diversion Structure (SJR)	Spillway Structure	Excavation For Spillway		88	6,698	3,766
8	341	GROUP 5	Diversion Structure (SJR)	Diversion Structure (SJR)	Spillway Structure	Compacted Backfill		88	6,698	3,766
8	342	GROUP 5	Diversion Structure (SJR)	Diversion Structure (SJR)	Spillway Structure	Cutoff Walls (Steel Sheet Piling)		103	38,638	21,728
8	343	GROUP 5	Diversion Structure (SJR)	Diversion Structure (SJR)	Spillway Structure	Precast Prestressed Concrete Pile (14"x14"x20')		103	38,638	21,728
8	344	GROUP 5	Diversion Structure (SJR)	Diversion Structure (SJR)	Spillway Structure	Concrete		83	4,029	2,266
8	345	GROUP 5	Diversion Structure (SJR)	Diversion Structure (SJR)	Spillway Structure	Steel Reinforcement		83	4,029	2,266
8	346	GROUP 5	Diversion Structure (SJR)	Diversion Structure (SJR)	Spillway Structure	Waterstop		78	2,118	1,191

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
8	347	GROUP 5	Diversion Structure (SJR)	Diversion Structure (SJR)	Radial Gates & Stoplogs					
8	348	GROUP 5	Diversion Structure (SJR)	Diversion Structure (SJR)	Radial Gates & Stoplogs	4 Radial Gates (Each 16'x18')		83	4,029	2,266
8	349	GROUP 5	Diversion Structure (SJR)	Diversion Structure (SJR)	Radial Gates & Stoplogs	Hoist (Motor Operated W/Wire Ropes)		83	4,029	2,266
8	350	GROUP 5	Diversion Structure (SJR)	Diversion Structure (SJR)	Radial Gates & Stoplogs	Embedded Metal (Stainless Steel)		83	4,029	2,266
8	351	GROUP 5	Diversion Structure (SJR)	Diversion Structure (SJR)	Radial Gates & Stoplogs	Stoplog (Steel, Each 12'x21') Inc Ribs		83	4,029	2,266
8	352	GROUP 5	Diversion Structure (SJR)	Diversion Structure (SJR)	Radial Gates & Stoplogs	Railing On Top Deck		83	4,029	2,266
8	353	GROUP 5	Diversion Structure (SJR)	Diversion Structure (SJR)	Radial Gates & Stoplogs	Riprap		83	4,029	2,266
8	354	GROUP 5	Diversion Structure (SJR)	Diversion Structure (SJR)	Radial Gates & Stoplogs	Water Velocity & Flow Measurement System		81	3,070	1,727
8	355	GROUP 5	Diversion Structure (SJR)	Diversion Structure (SJR)	Radial Gates & Stoplogs	Propane Tank & Enclosure (15'x20'x6' HCB)		80	2,963	1,666
8	356	GROUP 5	Diversion Structure (SJR)	Diversion Structure (SJR)	Radial Gates & Stoplogs	Emergency Generator		80	2,963	1,666
8	357	GROUP 5	Diversion Structure (SJR)	Diversion Structure (SJR)	Dam Construction					
8	358	GROUP 5	Diversion Structure (SJR)	Diversion Structure (SJR)	Dam Construction	Coffer Dam (Filling With Dirt & Removal)		103	38,638	21,728
8	359	GROUP 5	Diversion Structure (SJR)	Diversion Structure (SJR)	Dam Construction	Dewatering (6 Months)		83	4,029	2,266
8	360	GROUP 5	Diversion Structure (SJR)	Diversion Structure (SJR)	Dam Construction	Excavation For dam		88	6,698	3,766
8	361	GROUP 5	Diversion Structure (SJR)	Diversion Structure (SJR)	Dam Construction	Compacted Embankment - Impervious Fill		88	6,698	3,766
8	362	GROUP 5	Diversion Structure (SJR)	Diversion Structure (SJR)	Dam Construction	Compacted Embankment - Semipervious Fill		88	6,698	3,766
8	363	GROUP 5	Diversion Structure (SJR)	Diversion Structure (SJR)	Dam Construction	Compacted Embankment - Pervious Fill		88	6,698	3,766
8	364	GROUP 5	Diversion Structure (SJR)	Diversion Structure (SJR)	Dam Construction	Geotextile Fabric		80	2,963	1,666
8	365	GROUP 5	Diversion Structure (SJR)	Diversion Structure (SJR)	Dam Construction	9" Bedding		84	4,337	2,439
8	366	GROUP 5	Diversion Structure (SJR)	Diversion Structure (SJR)	Dam Construction	Stone Slope Protection, Type 1		83	4,029	2,266
8	367	GROUP 5	Diversion Structure (SJR)	Diversion Structure (SJR)	Dam Construction	Access Road (4" AC/6" AB, 24' Wide)		88	6,698	3,766
8	368	GROUP 5	Diversion Structure (SJR)	Diversion Structure (SJR)	Dam Construction	7' Chain Link Fence Including Barbed Wire		80	2,963	1,666
8	369	GROUP 5	Diversion Structure (SJR)	Diversion Structure (SJR)	Dam Construction	Pipe Handrail (On U/S & D/S Side Of Dam)		83	4,029	2,266

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
8	370	GROUP 5	Diversion Structure (SJR)	Diversion Structure (SJR)	Dam Construction	Automatic Entrance Gate (16' Wide)		81	3,070	1,727
8	371	GROUP 5	Diversion Structure (SJR)	Diversion Structure (SJR)	Dam Construction	Mobilization		80	2,963	1,666
8	192	GROUP 6	Fish Screen							
8	193	GROUP 6	Fish Screen	Fish Screen Structure						
8	194	GROUP 6	Fish Screen	Fish Screen Structure	Cofferdam (Steel Sheet Piling Including Bracing)			103	38,638	21,728
8	195	GROUP 6	Fish Screen	Fish Screen Structure	Cofferdam (Filling With Dirt & Removal)			103	38,638	21,728
8	196	GROUP 6	Fish Screen	Fish Screen Structure	Dewatering (For 8 Months)			83	4,029	2,266
8	197	GROUP 6	Fish Screen	Fish Screen Structure	Mobilization			80	2,963	1,666
8	198	GROUP 6	Fish Screen	Fish Screen Structure	Excavation			88	6,698	3,766
8	199	GROUP 6	Fish Screen	Fish Screen Structure	Backfill & Compaction			88	6,698	3,766
8	200	GROUP 6	Fish Screen	Fish Screen Structure	Concrete			83	4,029	2,266
8	201	GROUP 6	Fish Screen	Fish Screen Structure	Steel Reinforcement			83	4,029	2,266
8	202	GROUP 6	Fish Screen	Screen Panels				83	4,029	2,266
8	203	GROUP 6	Fish Screen	Flow Control Baffles (Same Size As Screen Panels)				83	4,029	2,266
8	204	GROUP 6	Fish Screen	Blocker Panels				83	4,029	2,266
8	205	GROUP 6	Fish Screen	Structural Steel - Framework For Screens, Baffles, & Blocker				83	4,029	2,266
8	206	GROUP 6	Fish Screen	Fish Screen Automatic Cleaner (Atlas ST8100)				83	4,029	2,266
8	208	GROUP 6	Fish Screen	Fish Return Pipes						
8	209	GROUP 6	Fish Screen	Fish Return Pipes	Pipe Trench Excavation (2:1 Side Slopes)			83	4,029	2,266
8	210	GROUP 6	Fish Screen	Fish Return Pipes	Pipe Bedding (CLSM To Depth Of 0.7 D, Cement Sand Slurry)			81	3,070	1,727
8	211	GROUP 6	Fish Screen	Fish Return Pipes	Backfill & Compaction (5' Above Pipe)			86	5,320	2,992
8	212	GROUP 6	Fish Screen	Fish Return Pipes	Concrete			83	4,029	2,266
8	213	GROUP 6	Fish Screen	Fish Return Pipes	Steel Reinforcement			83	4,029	2,266
8	214	GROUP 6	Fish Screen	Fish Return Pipes	Pipes (8 @ 1900 FT Each) 30" HDPE, SDR 32.5 Pipes			83	4,029	2,266
8	215	GROUP 6	Fish Screen	Fish Return Pipes	Access Manholes			83	4,029	2,266
8	217	GROUP 6	Fish Screen	Pump Station						
8	218	GROUP 6	Fish Screen	Pump Station	Excavation			88	6,698	3,766
8	219	GROUP 6	Fish Screen	Pump Station	Backfill			88	6,698	3,766

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
8	220	GROUP 6	Fish Screen	Pump Station	Concrete			83	4,029	2,266
8	221	GROUP 6	Fish Screen	Pump Station	Steel Reinforcement			83	4,029	2,266
8	222	GROUP 6	Fish Screen	Pump Station	Wemco-Hydrostal 30" Pump (16,000 GPM)			83	4,029	2,266
8	223	GROUP 6	Fish Screen	Pump Station	Open Frame Pitch Valve 30"			83	4,029	2,266
8	224	GROUP 6	Fish Screen	Control Building				80	2,963	1,666
8	225	GROUP 6	Fish Screen	Trashrack				83	4,029	2,266
8	226	GROUP 6	Fish Screen	Trashrake - 150' Long Across Four Vee Opening				83	4,029	2,266
8	228	GROUP 6	Fish Screen	Miscellaneous Metalwork (Handrail, Guardrail, & Fittings)				83	4,029	2,266
8	229	GROUP 6	Fish Screen	Mobilization				80	2,963	1,666
8	128	GROUP 7	Reach 2B Levee Extension FP-5							
8	129	GROUP 7	Reach 2B Levee Extension FP-5	Levees						
8	130	GROUP 7	Reach 2B Levee Extension FP-5	Levees	Levee Construction (Extension)					
8	131	GROUP 7	Reach 2B Levee Extension FP-5	Levees	Levee Construction (Extension)	Levee Preparation				
8	132	GROUP 7	Reach 2B Levee Extension FP-5	Levees	Levee Construction (Extension)	Levee Preparation	Clearing & Grubbing	87	6,126	3,445
8	133	GROUP 7	Reach 2B Levee Extension FP-5	Levees	Levee Construction (Extension)	Levee Preparation	Tree Removal	87	6,126	3,445
8	134	GROUP 7	Reach 2B Levee Extension FP-5	Levees	Levee Construction (Extension)	Right Setback Levee				
8	135	GROUP 7	Reach 2B Levee Extension FP-5	Levees	Levee Construction (Extension)	Right Setback Levee	Compacted Embankment	88	6,698	3,766
8	136	GROUP 7	Reach 2B Levee Extension FP-5	Levees	Levee Construction (Extension)	Right Setback Levee	Slurry Wall (Total Levee Length)	87	6,126	3,445
8	137	GROUP 7	Reach 2B Levee Extension FP-5	Levees	Levee Construction (Extension)	Right Setback Levee	USACE Trench Foundation	88	6,698	3,766
8	138	GROUP 7	Reach 2B Levee Extension FP-5	Levees	Levee Construction (Extension)	Right Setback Levee	Borrow Excavation (< 1 Mile)	88	6,698	3,766
8	139	GROUP 7	Reach 2B Levee Extension FP-5	Levees	Levee Construction (Extension)	Left Setback Levee				
8	140	GROUP 7	Reach 2B Levee Extension FP-5	Levees	Levee Construction (Extension)	Left Setback Levee	Compacted Embankment	88	6,698	3,766
8	141	GROUP 7	Reach 2B Levee Extension FP-5	Levees	Levee Construction (Extension)	Left Setback Levee	Slurry Wall (Total Levee Length)	87	6,126	3,445
8	142	GROUP 7	Reach 2B Levee Extension FP-5	Levees	Levee Construction (Extension)	Left Setback Levee	USACE Trench Foundation	88	6,698	3,766
8	143	GROUP 7	Reach 2B Levee Extension FP-5	Levees	Levee Construction (Extension)	Left Setback Levee	Borrow Excavation (< 1 Mile)	88	6,698	3,766
8	144	GROUP 7	Reach 2B Levee Extension FP-5	Levees	Levee Construction (Extension)	General				

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
8	145	GROUP 7	Reach 2B Levee Extension FP-5	Levees	Levee Construction (Extension)	General	Seeding (Levee Slopes)	88	6,698	3,766
8	146	GROUP 7	Reach 2B Levee Extension FP-5	Levees	Levee Construction (Extension)	General	Ramp & Turnabouts	88	6,698	3,766
8	147	GROUP 7	Reach 2B Levee Extension FP-5	Levees	Levee Construction (Extension)	General	Right Levee Aggregate Base Roadway	88	6,698	3,766
8	148	GROUP 7	Reach 2B Levee Extension FP-5	Levees	Levee Construction (Extension)	General	Left Levee Aggregate Base Roadway	88	6,698	3,766
8	149	GROUP 7	Reach 2B Levee Extension FP-5	Levees	Levee Construction (Extension)	General	Haul Excess Material By Truck (< 20 Miles, Drainage Channel)	88	6,698	3,766
8	150	GROUP 7	Reach 2B Levee Extension FP-5	Levees	Levee Construction (Extension)	General	Mobilization	80	2,963	1,666
8	151	GROUP 7	Reach 2B Levee Extension FP-5	Levees	Revetment					
8	152	GROUP 7	Reach 2B Levee Extension FP-5	Levees	Revetment	Levee Revetment (4,600 Linear Feet)				
8	153	GROUP 7	Reach 2B Levee Extension FP-5	Levees	Revetment	Levee Revetment (4,600 Linear Feet)	Mobilization & Demobilization (10%)	80	2,963	1,666
8	154	GROUP 7	Reach 2B Levee Extension FP-5	Levees	Revetment	Levee Revetment (4,600 Linear Feet)	Clearing & Grubbing	87	6,126	3,445
8	155	GROUP 7	Reach 2B Levee Extension FP-5	Levees	Revetment	Levee Revetment (4,600 Linear Feet)	Launch Rock	83	4,029	2,266
8	156	GROUP 7	Reach 2B Levee Extension FP-5	Levees	Revetment	Levee Revetment (4,600 Linear Feet)	Rock Slope Protection	83	4,029	2,266
8	157	GROUP 7	Reach 2B Levee Extension FP-5	Levees	Revetment	Levee Revetment (4,600 Linear Feet)	Clean Sand	83	4,029	2,266
8	158	GROUP 7	Reach 2B Levee Extension FP-5	Levees	Revetment	Levee Revetment (4,600 Linear Feet)	Landscaping (Ag Soil, Plants, Etc)	82	3,544	1,993
8	159	GROUP 7	Reach 2B Levee Extension FP-5	Levees	Revetment	Levee Revetment (4,600 Linear Feet)	Erosion Control	75	1,581	889
8	160	GROUP 7	Reach 2B Levee Extension FP-5	Levees	Revetment	Levee Revetment (4,600 Linear Feet)	Environmental Mitigation (20% Of Subtotal)	75	1,581	889
8	161	GROUP 7	Reach 2B Levee Extension FP-5	Levees	Revetment	Levee Revetment (4,600 Linear Feet)	Rock Slope - Labor	83	4,029	2,266
8	162	GROUP 7	Reach 2B Levee Extension FP-5	Levees	Revetment	Levee Revetment (4,600 Linear Feet)	Mobilization	80	2,963	1,666
8	163	GROUP 7	Reach 2B Levee Extension FP-5	Floodplain & Lands						
8	164	GROUP 7	Reach 2B Levee Extension FP-5	Floodplain & Lands	Levee Removal					
8	165	GROUP 7	Reach 2B Levee Extension FP-5	Floodplain & Lands	Levee Removal	Excavation Of Levee & Hauling Of Excess Material By Truck (< 20 Miles)		88	6,698	3,766

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
8	166	GROUP 7	Reach 2B Levee Extension FP-5	Floodplain & Lands	Levee Removal	Mobilization		80	2,963	1,666
8	372	GROUP 8	Reach 2B							
8	373	GROUP 8	Reach 2B	Compact Alignment Fish Barrier						
8	374	GROUP 8	Reach 2B	Compact Alignment Fish Barrier	Clearing & Grubbing			87	6,126	3,445
8	375	GROUP 8	Reach 2B	Compact Alignment Fish Barrier	Sheet Pile Coffer Dams			103	38,638	21,728
8	376	GROUP 8	Reach 2B	Compact Alignment Fish Barrier	Sheet Pile Removal			103	38,638	21,728
8	377	GROUP 8	Reach 2B	Compact Alignment Fish Barrier	Dewatering			83	4,029	2,266
8	378	GROUP 8	Reach 2B	Compact Alignment Fish Barrier	Rock Riprap Approaches - Labor			83	4,029	2,266
8	380	GROUP 8	Reach 2B	Compact Alignment Fish Barrier	Site Excavation (Excludes Bypass Channel)			88	6,698	3,766
8	381	GROUP 8	Reach 2B	Compact Alignment Fish Barrier	Engineered Fill			88	6,698	3,766
8	382	GROUP 8	Reach 2B	Compact Alignment Fish Barrier	Transition Road Construction (6" AB)			88	6,698	3,766
8	383	GROUP 8	Reach 2B	Compact Alignment Fish Barrier	Structural Concrete			84	4,462	2,509
8	384	GROUP 8	Reach 2B	Compact Alignment Fish Barrier	18" Concrete Piles (30' Deep)			103	38,638	21,728
8	385	GROUP 8	Reach 2B	Compact Alignment Fish Barrier	Concrete Pile Cap			83	4,029	2,266
8	386	GROUP 8	Reach 2B	Compact Alignment Fish Barrier	Bridge Appurtenances			83	4,029	2,266
8	387	GROUP 8	Reach 2B	Compact Alignment Fish Barrier	Trash Rack & Bar Rack/Fish Barrier			83	4,029	2,266
8	388	GROUP 8	Reach 2B	Compact Alignment Fish Barrier	Steel Monorail Supports			83	4,029	2,266
8	389	GROUP 8	Reach 2B	Compact Alignment Fish Barrier	Traffic Guard Railing			83	4,029	2,266
8	390	GROUP 8	Reach 2B	Compact Alignment Fish Barrier	Generator & Transformer			83	4,029	2,266
8	391	GROUP 8	Reach 2B	Compact Alignment Fish Barrier	Bosker Trash Rake/Hoist			83	4,029	2,266
8	392	GROUP 8	Reach 2B	Compact Alignment Fish Barrier	Access Gates			81	3,070	1,727
8	393	GROUP 8	Reach 2B	Compact Alignment Fish Barrier	Dust Control			79	2,376	1,336
8	394	GROUP 8	Reach 2B	Compact Alignment Fish Barrier	SWPPP			75	1,581	889
8	395	GROUP 8	Reach 2B	Compact Alignment Fish Barrier	Worker Protection			82	3,529	1,984
8	396	GROUP 8	Reach 2B	Compact Alignment Fish Barrier	Mobilization			80	2,963	1,666

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
8	51	GROUP 10	Relocations	Relocations						
8	52	GROUP 10	Relocations	Relocations	Utilities					
8	53	GROUP 10	Relocations	Relocations	Utilities	Overhead Electrical Distribution Removal & Replacement		82	3,544	1,993
8	54	GROUP 10	Relocations	Relocations	Utilities	Mobilization		85	5,244	2,949
8	55	GROUP 10	Relocations	Relocations	Canal					
8	56	GROUP 10	Relocations	Relocations	Canal	Canal Relocations		85	5,113	2,875
8	57	GROUP 10	Relocations	Relocations	Canal	Mobilization		85	5,244	2,949
8	58	GROUP 10	Relocations	Relocations	Pump Station					
8	59	GROUP 10	Relocations	Relocations	Pump Station	General Pump Station Site Preparation & Construction (2 Each Locations)				
8	60	GROUP 10	Relocations	Relocations	Pump Station	General Pump Station Site Preparation & Construction (2 Each Locations)	Clearing & Grubbing	87	6,126	3,445
8	61	GROUP 10	Relocations	Relocations	Pump Station	General Pump Station Site Preparation & Construction (2 Each Locations)	Canal & Drain Relocation	86	5,460	3,070
8	62	GROUP 10	Relocations	Relocations	Pump Station	General Pump Station Site Preparation & Construction (2 Each Locations)	Concrete Lining (Intake & Outfall)	83	4,029	2,266
8	63	GROUP 10	Relocations	Relocations	Pump Station	General Pump Station Site Preparation & Construction (2 Each Locations)	Rock Riprap At Outfall	83	4,029	2,266
8	64	GROUP 10	Relocations	Relocations	Pump Station	General Pump Station Site Preparation & Construction (2 Each Locations)	Pump & Sump Relocation	82	3,544	1,993
8	65	GROUP 10	Relocations	Relocations	Pump Station	General Pump Station Site Preparation & Construction (2 Each Locations)	Replace Electrical Panel	81	3,070	1,727
8	66	GROUP 10	Relocations	Relocations	Pump Station	General Pump Station Site Preparation & Construction (2 Each Locations)	PG&E Electrical Service	82	3,619	2,035
8	67	GROUP 10	Relocations	Relocations	Pump Station	General Pump Station Site Preparation & Construction (2 Each Locations)	12" Steel Pipe	81	3,070	1,727

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
8	68	GROUP 10	Relocations	Relocations	Pump Station	General Pump Station Site Preparation & Construction (2 Each Locations)	Dust Control	82	3,529	1,984
8	69	GROUP 10	Relocations	Relocations	Pump Station	General Pump Station Site Preparation & Construction (2 Each Locations)	Worker Protection	80	2,963	1,666
8	70	GROUP 10	Relocations	Relocations	Pump Station	General Pump Station Site Preparation & Construction (2 Each Locations)	Mobilization	85	5,244	2,949
8	72	GROUP 10	Relocations	Relocations	Pump Station	(38 CFS 72" Pipeline From Isolation Structure To Approx. City Of Mendota Well 7)				
8	73	GROUP 10	Relocations	Relocations	Pump Station	(38 CFS 72" Pipeline From Isolation Structure To Approx. City Of Mendota Well 7)	Clearing & Grubbing	85	4,742	2,666
8	74	GROUP 10	Relocations	Relocations	Pump Station	(38 CFS 72" Pipeline From Isolation Structure To Approx. City Of Mendota Well 7)	Reinforced Concrete Pipe (72" RGRCP D-50 Pipe)	83	4,029	2,266
8	75	GROUP 10	Relocations	Relocations	Pump Station	(38 CFS 72" Pipeline From Isolation Structure To Approx. City Of Mendota Well 7)	Pipe Trench Excavation (2:1 Side Slopes)	82	3,544	1,993
8	76	GROUP 10	Relocations	Relocations	Pump Station	(38 CFS 72" Pipeline From Isolation Structure To Approx. City Of Mendota Well 7)	Pipe Bedding (CLSM To Depth Of 0.375D, Cement Sand Slurry)	84	4,350	2,446
8	77	GROUP 10	Relocations	Relocations	Pump Station	(38 CFS 72" Pipeline From Isolation Structure To Approx. City Of Mendota Well 7)	Pipe Backfill & Compaction (6' Above Pipe)	85	4,742	2,666
8	78	GROUP 10	Relocations	Relocations	Pump Station	(38 CFS 72" Pipeline From Isolation Structure To Approx. City Of Mendota Well 7)	Outlet Structure	84	4,226	2,376
8	79	GROUP 10	Relocations	Relocations	Pump Station	(38 CFS 72" Pipeline From Isolation Structure To Approx. City Of Mendota Well 7)	Pipe Appurtenances	81	3,070	1,727
8	80	GROUP 10	Relocations	Relocations	Pump Station	(38 CFS 72" Pipeline From Isolation Structure To Approx. City Of Mendota Well 7)	Dust Control	78	2,236	1,257

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
8	81	GROUP 10	Relocations	Relocations	Pump Station	(38 CFS 72" Pipeline From Isolation Structure To Approx. City Of Mendota Well 7)	SWPPP	81	3,155	1,774
8	82	GROUP 10	Relocations	Relocations	Pump Station	(38 CFS 72" Pipeline From Isolation Structure To Approx. City Of Mendota Well 7)	Worker Protection	78	2,118	1,191
8	83	GROUP 10	Relocations	Relocations	Pump Station	Lift Station - 38 CFS Near Isolation Structure				
8	84	GROUP 10	Relocations	Relocations	Pump Station	Lift Station - 38 CFS Near Isolation Structure	Clearing & Grubbing	87	6,126	3,445
8	85	GROUP 10	Relocations	Relocations	Pump Station	Lift Station - 38 CFS Near Isolation Structure	Pumps & Structure	80	2,963	1,666
8	86	GROUP 10	Relocations	Relocations	Pump Station	Lift Station - 38 CFS Near Isolation Structure	Coffer Dam	103	38,638	21,728
8	87	GROUP 10	Relocations	Relocations	Pump Station	Lift Station - 38 CFS Near Isolation Structure	Dewatering Within Coffer Dam	83	4,029	2,266
8	88	GROUP 10	Relocations	Relocations	Pump Station	Lift Station - 38 CFS Near Isolation Structure	Removal Of Existing Pumps & Pipeline	83	4,029	2,266
8	89	GROUP 10	Relocations	Relocations	Pump Station	Lift Station - 38 CFS Near Isolation Structure	Dust Control	79	2,376	1,336
8	90	GROUP 10	Relocations	Relocations	Pump Station	Lift Station - 38 CFS Near Isolation Structure	SWPPP	75	1,581	889
8	91	GROUP 10	Relocations	Relocations	Pump Station	Lift Station - 38 CFS Near Isolation Structure	Worker Protection	82	3,529	1,984
8	93	GROUP 10	Relocations	Relocations	Pump Station	(22 CFS 30" Pipeline At Well 7 To Existing Mowry Ranch Pipeline)				
8	94	GROUP 10	Relocations	Relocations	Pump Station	(22 CFS 30" Pipeline At Well 7 To Existing Mowry Ranch Pipeline)	Clearing & Grubbing	86	5,912	3,325
8	95	GROUP 10	Relocations	Relocations	Pump Station	(22 CFS 30" Pipeline At Well 7 To Existing Mowry Ranch Pipeline)	Reinforced Concrete Pipe (30" RGRCP D-50 Pipe)	83	4,029	2,266
8	96	GROUP 10	Relocations	Relocations	Pump Station	(22 CFS 30" Pipeline At Well 7 To Existing Mowry Ranch Pipeline)	Pipe Trench Excavation (2:1 Side Slopes)	82	3,544	1,993
8	97	GROUP 10	Relocations	Relocations	Pump Station	(22 CFS 30" Pipeline At Well 7 To Existing Mowry Ranch Pipeline)	Pipe Bedding (CLSM To Depth Of 0.375D, Cement Sand Slurry)	84	4,350	2,446
8	98	GROUP 10	Relocations	Relocations	Pump Station	(22 CFS 30" Pipeline At Well 7 To Existing Mowry Ranch Pipeline)	Pipe Backfill & Compaction (6' Above Pipe)	85	4,742	2,666
8	99	GROUP 10	Relocations	Relocations	Pump Station	(22 CFS 30" Pipeline At Well 7 To Existing Mowry Ranch Pipeline)	Pipe Appurtenances	81	3,070	1,727
8	100	GROUP 10	Relocations	Relocations	Pump Station	(22 CFS 30" Pipeline At Well 7 To Existing Mowry Ranch Pipeline)	Dust Control	78	2,236	1,257

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
8	101	GROUP 10	Relocations	Relocations	Pump Station	(22 CFS 30" Pipeline At Well 7 To Existing Mowry Ranch Pipeline)	SWPPP	81	3,155	1,774
8	102	GROUP 10	Relocations	Relocations	Pump Station	(22 CFS 30" Pipeline At Well 7 To Existing Mowry Ranch Pipeline)	Worker Protection	85	5,244	2,949
8	104	GROUP 10	Relocations	Relocations	Pump Station	(16 CFS 24" Pipeline From Well 7 To Approx. Well 9)				
8	105	GROUP 10	Relocations	Relocations	Pump Station	(16 CFS 24" Pipeline From Well 7 To Approx. Well 9)	Clearing & Grubbing	84	4,462	2,509
8	106	GROUP 10	Relocations	Relocations	Pump Station	(16 CFS 24" Pipeline From Well 7 To Approx. Well 9)	Reinforced Concrete Pipe (24" RGRCP D-50 Pipe)	83	4,029	2,266
8	107	GROUP 10	Relocations	Relocations	Pump Station	(16 CFS 24" Pipeline From Well 7 To Approx. Well 9)	Pipe Trench Excavation (2:1 Side Slopes)	82	3,544	1,993
8	108	GROUP 10	Relocations	Relocations	Pump Station	(16 CFS 24" Pipeline From Well 7 To Approx. Well 9)	Pipe Bedding (CLSM To Depth Of 0.375D, Cement Sand Slurry)	84	4,350	2,446
8	109	GROUP 10	Relocations	Relocations	Pump Station	(16 CFS 24" Pipeline From Well 7 To Approx. Well 9)	Pipe Backfill & Compaction (6' Above Pipe)	85	4,742	2,666
8	110	GROUP 10	Relocations	Relocations	Pump Station	(16 CFS 24" Pipeline From Well 7 To Approx. Well 9)	Pipe Appurtenances	81	3,070	1,727
8	111	GROUP 10	Relocations	Relocations	Pump Station	(16 CFS 24" Pipeline From Well 7 To Approx. Well 9)	Dust Control	78	2,236	1,257
8	112	GROUP 10	Relocations	Relocations	Pump Station	(16 CFS 24" Pipeline From Well 7 To Approx. Well 9)	SWPPP	81	3,155	1,774
8	113	GROUP 10	Relocations	Relocations	Pump Station	(16 CFS 24" Pipeline From Well 7 To Approx. Well 9)	Worker Protection	80	2,963	1,666
8	114	GROUP 10	Relocations	Relocations	Pump Station	(16 CFS 24" Pipeline From Well 7 To Approx. Well 9)	Mobilization	78	2,118	1,191
8	116	GROUP 10	Relocations	Relocations	Pump Station	Site Preparation & Construction (2 Each Locations)				
8	117	GROUP 10	Relocations	Relocations	Pump Station	Site Preparation & Construction (2 Each Locations)	Clearing & Grubbing	87	6,126	3,445
8	118	GROUP 10	Relocations	Relocations	Pump Station	Site Preparation & Construction (2 Each Locations)	Earthwork (Loader & Truck)	88	6,698	3,766

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
8	119	GROUP 10	Relocations	Relocations	Pump Station	Site Preparation & Construction (2 Each Locations)	Revegetation	88	6,698	3,766
8	120	GROUP 10	Relocations	Relocations	Pump Station	Site Preparation & Construction (2 Each Locations)	Pull Pump & Column & Install After Modifications	83	4,029	2,266
8	121	GROUP 10	Relocations	Relocations	Pump Station	Site Preparation & Construction (2 Each Locations)	Column Extension	83	4,029	2,266
8	122	GROUP 10	Relocations	Relocations	Pump Station	Site Preparation & Construction (2 Each Locations)	Casing Extension	83	4,029	2,266
8	123	GROUP 10	Relocations	Relocations	Pump Station	Site Preparation & Construction (2 Each Locations)	Discharge Pipe Modifications	83	4,029	2,266
8	124	GROUP 10	Relocations	Relocations	Pump Station	Site Preparation & Construction (2 Each Locations)	Replace Electrical Panel	81	3,070	1,727
8	125	GROUP 10	Relocations	Relocations	Pump Station	Site Preparation & Construction (2 Each Locations)	PG&E Electrical Service	81	3,070	1,727
8	126	GROUP 10	Relocations	Relocations	Pump Station	Site Preparation & Construction (2 Each Locations)	Dust Control	79	2,376	1,336
8	127	GROUP 10	Relocations	Relocations	Pump Station	Site Preparation & Construction (2 Each Locations)	Mobilization	80	2,963	1,666
8	230	GROUP 11	Columbia Canal Company Relocation Facilities							
8	231	GROUP 11	Columbia Canal Company Relocation Facilities	USBR Main Columbia Pumping Plant - 250 CFS						
8	232	GROUP 11	Columbia Canal Company Relocation Facilities	USBR Main Columbia Pumping Plant - 250 CFS	Clearing & Grubbing			87	6,126	3,445
8	233	GROUP 11	Columbia Canal Company Relocation Facilities	USBR Main Columbia Pumping Plant - 250 CFS	Site Excavation			88	6,698	3,766
8	234	GROUP 11	Columbia Canal Company Relocation Facilities	USBR Main Columbia Pumping Plant - 250 CFS	Structure Backfill			88	6,698	3,766
8	235	GROUP 11	Columbia Canal Company Relocation Facilities	USBR Main Columbia Pumping Plant - 250 CFS	Structure Concrete			83	4,029	2,266

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
8	236	GROUP 11	Columbia Canal Company Relocation Facilities	USBR Main Columbia Pumping Plant - 250 CFS	Pumps & Motors (50 HP)			83	4,029	2,266
8	237	GROUP 11	Columbia Canal Company Relocation Facilities	USBR Main Columbia Pumping Plant - 250 CFS	Pump & Motor With VFD & Appurtenances (50 HP)			83	4,029	2,266
8	238	GROUP 11	Columbia Canal Company Relocation Facilities	USBR Main Columbia Pumping Plant - 250 CFS	Pumps & Motors (75 HP)			83	4,029	2,266
8	239	GROUP 11	Columbia Canal Company Relocation Facilities	USBR Main Columbia Pumping Plant - 250 CFS	Pump & Motor With VFD & Appurtenances (75 HP)			83	4,029	2,266
8	240	GROUP 11	Columbia Canal Company Relocation Facilities	USBR Main Columbia Pumping Plant - 250 CFS	Pump Control Building (16'x8')			80	2,963	1,666
8	241	GROUP 11	Columbia Canal Company Relocation Facilities	USBR Main Columbia Pumping Plant - 250 CFS	72" Steel Pipe			84	4,462	2,509
8	242	GROUP 11	Columbia Canal Company Relocation Facilities	USBR Main Columbia Pumping Plant - 250 CFS	36" Pump Discharge Assemblies			80	2,963	1,666
8	243	GROUP 11	Columbia Canal Company Relocation Facilities	USBR Main Columbia Pumping Plant - 250 CFS	Trashrack			83	4,029	2,266
8	244	GROUP 11	Columbia Canal Company Relocation Facilities	USBR Main Columbia Pumping Plant - 250 CFS	Miscellaneous Metals			83	4,029	2,266
8	245	GROUP 11	Columbia Canal Company Relocation Facilities	USBR Main Columbia Pumping Plant - 250 CFS	Excavate Ditch To Connect Pump Inlet To River Thalweg			88	6,698	3,766
8	246	GROUP 11	Columbia Canal Company Relocation Facilities	USBR Main Columbia Pumping Plant - 250 CFS	Flow Meter (Ultrasonic In Each Pipe Within Concrete Vault)			84	4,462	2,509
8	247	GROUP 11	Columbia Canal Company Relocation Facilities	USBR Main Columbia Pumping Plant - 250 CFS	Coffer Dam			103	38,638	21,728

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
8	248	GROUP 11	Columbia Canal Company Relocation Facilities	USBR Main Columbia Pumping Plant - 250 CFS	Dewatering Within Coffer Dam			83	4,029	2,266
8	249	GROUP 11	Columbia Canal Company Relocation Facilities	USBR Main Columbia Pumping Plant - 250 CFS	Dust Control			79	2,376	1,336
8	250	GROUP 11	Columbia Canal Company Relocation Facilities	USBR Main Columbia Pumping Plant - 250 CFS	SWPPP			75	1,581	889
8	251	GROUP 11	Columbia Canal Company Relocation Facilities	USBR Main Columbia Pumping Plant - 250 CFS	Worker Protection			82	3,529	1,984
8	252	GROUP 11	Columbia Canal Company Relocation Facilities	Siphon Under Compact Alignment (From Flow Meter To Outlet)						
8	253	GROUP 11	Columbia Canal Company Relocation Facilities	Siphon Under Compact Alignment (From Flow Meter To Outlet)	Clearing & Grubbing			87	6,126	3,445
8	254	GROUP 11	Columbia Canal Company Relocation Facilities	Siphon Under Compact Alignment (From Flow Meter To Outlet)	Reinforced Concrete Pipe (RCP) - Two 72" D-50 Pipes			83	4,029	2,266
8	255	GROUP 11	Columbia Canal Company Relocation Facilities	Siphon Under Compact Alignment (From Flow Meter To Outlet)	Reinforced Concrete Pipe (RCP) - 72" Bends			83	4,029	2,266
8	256	GROUP 11	Columbia Canal Company Relocation Facilities	Siphon Under Compact Alignment (From Flow Meter To Outlet)	Pipe Trench Excavation (2:1 Side Slopes)			83	4,029	2,266
8	257	GROUP 11	Columbia Canal Company Relocation Facilities	Siphon Under Compact Alignment (From Flow Meter To Outlet)	Pipe Bedding (CLSM To Depth Of 0.5D, Cement Sand Slurry)			81	3,070	1,727
8	258	GROUP 11	Columbia Canal Company Relocation Facilities	Siphon Under Compact Alignment (From Flow Meter To Outlet)	Pipe Backfill & Compaction (15' Above Pipe)			86	5,320	2,992
8	259	GROUP 11	Columbia Canal Company Relocation Facilities	Siphon Under Compact Alignment (From Flow Meter To Outlet)	Dust Control			79	2,376	1,336

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
8	260	GROUP 11	Columbia Canal Company Relocation Facilities	Siphon Under Compact Alignment (From Flow Meter To Outlet)	SWPPP			75	1,581	889
8	261	GROUP 11	Columbia Canal Company Relocation Facilities	Siphon Under Compact Alignment (From Flow Meter To Outlet)	Worker Protection			82	3,529	1,984
8	262	GROUP 11	Columbia Canal Company Relocation Facilities	USBR Main Columbia Pumping Plant Outlet Structures						
8	263	GROUP 11	Columbia Canal Company Relocation Facilities	USBR Main Columbia Pumping Plant Outlet Structures	Clearing & Grubbing			87	6,126	3,445
8	264	GROUP 11	Columbia Canal Company Relocation Facilities	USBR Main Columbia Pumping Plant Outlet Structures	Structure Backfill			88	6,698	3,766
8	265	GROUP 11	Columbia Canal Company Relocation Facilities	USBR Main Columbia Pumping Plant Outlet Structures	Structure Concrete (Check Structure & Headwalls)			83	4,029	2,266
8	266	GROUP 11	Columbia Canal Company Relocation Facilities	USBR Main Columbia Pumping Plant Outlet Structures	72" Gate			83	4,029	2,266
8	267	GROUP 11	Columbia Canal Company Relocation Facilities	USBR Main Columbia Pumping Plant Outlet Structures	Riprap Facing Class Purchase, 100 LB/CF, 2' Deep			83	4,029	2,266
8	268	GROUP 11	Columbia Canal Company Relocation Facilities	USBR Main Columbia Pumping Plant Outlet Structures	Rock Riprap Approaches / Outfalls & Side Slope Protection, 2' Deep			83	4,029	2,266
8	269	GROUP 11	Columbia Canal Company Relocation Facilities	USBR Main Columbia Pumping Plant Outlet Structures	Dust Control			79	2,376	1,336
8	270	GROUP 11	Columbia Canal Company Relocation Facilities	USBR Main Columbia Pumping Plant Outlet Structures	SWPPP			75	1,581	889
8	271	GROUP 11	Columbia Canal Company Relocation Facilities	USBR Main Columbia Pumping Plant Outlet Structures	Worker Protection			82	3,529	1,984

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
8	272	GROUP 11	Columbia Canal Company Relocation Facilities	Raising Columbia Canal 5' From Proposed Headworks Back To Old Headworks						
8	273	GROUP 11	Columbia Canal Company Relocation Facilities	Raising Columbia Canal 5' From Proposed Headworks Back To Old Headworks	Clearing & Grubbing			87	6,126	3,445
8	274	GROUP 11	Columbia Canal Company Relocation Facilities	Raising Columbia Canal 5' From Proposed Headworks Back To Old Headworks	Demolish Old Pump Structure, Flume, & Disposal			87	6,126	3,445
8	275	GROUP 11	Columbia Canal Company Relocation Facilities	Raising Columbia Canal 5' From Proposed Headworks Back To Old Headworks	Onsite Excavation			88	6,698	3,766
8	276	GROUP 11	Columbia Canal Company Relocation Facilities	Raising Columbia Canal 5' From Proposed Headworks Back To Old Headworks	Loader / Excavator & Truck For Material (Compacted Vol + 20%)			88	6,698	3,766
8	277	GROUP 11	Columbia Canal Company Relocation Facilities	Raising Columbia Canal 5' From Proposed Headworks Back To Old Headworks	Haul Truck (Less Than 20 Miles, Compacted Vol + 20%)			88	6,698	3,766
8	278	GROUP 11	Columbia Canal Company Relocation Facilities	Raising Columbia Canal 5' From Proposed Headworks Back To Old Headworks	Earthwork Fill & Compaction			88	6,698	3,766
8	279	GROUP 11	Columbia Canal Company Relocation Facilities	Raising Columbia Canal 5' From Proposed Headworks Back To Old Headworks	Canal Lining At 6" Thick			83	4,029	2,266
8	280	GROUP 11	Columbia Canal Company Relocation Facilities	Raising Columbia Canal 5' From Proposed Headworks Back To Old Headworks	Purchasing & Hauling Gravel For Roadway, 100 LB/CF			86	5,617	3,159
8	281	GROUP 11	Columbia Canal Company Relocation Facilities	Raising Columbia Canal 5' From Proposed Headworks Back To Old Headworks	Gravel Placement For New Road At 6" Thick, 4,000 LF On Both Banks			88	6,698	3,766
8	282	GROUP 11	Columbia Canal Company Relocation Facilities	Raising Columbia Canal 5' From Proposed Headworks Back To Old Headworks	Structure Concrete (Check Structure)			83	4,029	2,266
8	283	GROUP 11	Columbia Canal Company Relocation Facilities	Raising Columbia Canal 5' From Proposed Headworks Back To Old Headworks	Dust Control			79	2,376	1,336

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
8	284	GROUP 11	Columbia Canal Company Relocation Facilities	Raising Columbia Canal 5' From Proposed Headworks Back To Old Headworks	SWPPP			75	1,581	889
8	285	GROUP 11	Columbia Canal Company Relocation Facilities	Raising Columbia Canal 5' From Proposed Headworks Back To Old Headworks	Worker Protection			82	3,529	1,984
8	286	GROUP 11	Columbia Canal Company Relocation Facilities	Raising Columbia Canal 5' From Proposed Headworks Back To Old Headworks	Mobilization			80	2,963	1,666
8	435	GROUP 12	Relocations SJR Bypass Canal South Option							
8	436	GROUP 12	Relocations SJR Bypass Canal South Option	Canal						
8	437	GROUP 12	Relocations SJR Bypass Canal South Option	Canal	Canal Relocations			88	6,698	3,766
8	438	GROUP 12	Relocations SJR Bypass Canal South Option	Canal	Mobilization			80	2,963	1,666
8	439	GROUP 12	Relocations SJR Bypass Canal South Option	Utilities						
8	440	GROUP 12	Relocations SJR Bypass Canal South Option	Utilities	Overhead Electrical Distribution Removal & Replacement			83	4,029	2,266
8	441	GROUP 12	Relocations SJR Bypass Canal South Option	Utilities	Mobilization			80	2,963	1,666
8	442	GROUP 12	Relocations SJR Bypass Canal South Option	Pump Station						
8	443	GROUP 12	Relocations SJR Bypass Canal South Option	Pump Station	General Pump Station Site Preparation & Construction (2 Each Locations)					
8	444	GROUP 12	Relocations SJR Bypass Canal South Option	Pump Station	General Pump Station Site Preparation & Construction (2 Each Locations)	Clearing & Grubbing		87	6,126	3,445
8	445	GROUP 12	Relocations SJR Bypass Canal South Option	Pump Station	General Pump Station Site Preparation & Construction (2 Each Locations)	Canal/Drain Relocation		88	6,698	3,766

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
8	446	GROUP 12	Relocations SJR Bypass Canal South Option	Pump Station	General Pump Station Site Preparation & Construction (2 Each Locations)	Concrete Lining (Intake & Outfall)		83	4,029	2,266
8	447	GROUP 12	Relocations SJR Bypass Canal South Option	Pump Station	General Pump Station Site Preparation & Construction (2 Each Locations)	Rock Riprap At Outfall		83	4,029	2,266
8	448	GROUP 12	Relocations SJR Bypass Canal South Option	Pump Station	General Pump Station Site Preparation & Construction (2 Each Locations)	Pump & Sump Relocation		83	4,029	2,266
8	449	GROUP 12	Relocations SJR Bypass Canal South Option	Pump Station	General Pump Station Site Preparation & Construction (2 Each Locations)	Replace Electrical Panel		81	3,070	1,727
8	450	GROUP 12	Relocations SJR Bypass Canal South Option	Pump Station	General Pump Station Site Preparation & Construction (2 Each Locations)	PG&E Electrical Service		81	3,070	1,727
8	451	GROUP 12	Relocations SJR Bypass Canal South Option	Pump Station	General Pump Station Site Preparation & Construction (2 Each Locations)	12" Steel Pipe		83	4,029	2,266
8	452	GROUP 12	Relocations SJR Bypass Canal South Option	Pump Station	General Pump Station Site Preparation & Construction (2 Each Locations)	Dust Control		79	2,376	1,336
8	453	GROUP 12	Relocations SJR Bypass Canal South Option	Pump Station	General Pump Station Site Preparation & Construction (2 Each Locations)	Worker Protection		82	3,529	1,984
8	454	GROUP 12	Relocations SJR Bypass Canal South Option	Pump Station	General Pump Station Site Preparation & Construction (2 Each Locations)	Mobilization		80	2,963	1,666
8	455	GROUP 12	Relocations SJR Bypass Canal South Option	Deep Well Floodproofing						
8	456	GROUP 12	Relocations SJR Bypass Canal South Option	Deep Well Floodproofing	Site Preparation & Construction (2 Each Locations)					
8	457	GROUP 12	Relocations SJR Bypass Canal South Option	Deep Well Floodproofing	Site Preparation & Construction (2 Each Locations)	Clearing & Grubbing		87	6,126	3,445
8	458	GROUP 12	Relocations SJR Bypass Canal South Option	Deep Well Floodproofing	Site Preparation & Construction (2 Each Locations)	Earthwork (Loader & Truck)		88	6,698	3,766
8	459	GROUP 12	Relocations SJR Bypass Canal South Option	Deep Well Floodproofing	Site Preparation & Construction (2 Each Locations)	Revegetation		88	6,698	3,766

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
8	460	GROUP 12	Relocations SJR Bypass Canal South Option	Deep Well Floodproofing	Site Preparation & Construction (2 Each Locations)	Pull Pump & Column and Reinstall After Modifications		83	4,029	2,266
8	461	GROUP 12	Relocations SJR Bypass Canal South Option	Deep Well Floodproofing	Site Preparation & Construction (2 Each Locations)	Column Extension		83	4,029	2,266
8	462	GROUP 12	Relocations SJR Bypass Canal South Option	Deep Well Floodproofing	Site Preparation & Construction (2 Each Locations)	Casing Extension		83	4,029	2,266
8	463	GROUP 12	Relocations SJR Bypass Canal South Option	Deep Well Floodproofing	Site Preparation & Construction (2 Each Locations)	Discharge Pipe Modifications		83	4,029	2,266
8	464	GROUP 12	Relocations SJR Bypass Canal South Option	Deep Well Floodproofing	Site Preparation & Construction (2 Each Locations)	Replace Electrical Panel		81	3,070	1,727
8	465	GROUP 12	Relocations SJR Bypass Canal South Option	Deep Well Floodproofing	Site Preparation & Construction (2 Each Locations)	PG&E Electrical Service		81	3,070	1,727
8	466	GROUP 12	Relocations SJR Bypass Canal South Option	Deep Well Floodproofing	Site Preparation & Construction (2 Each Locations)	Dust Control		79	2,376	1,336
8	467	GROUP 12	Relocations SJR Bypass Canal South Option	Deep Well Floodproofing	Site Preparation & Construction (2 Each Locations)	Mobilization		80	2,963	1,666
8	320	GROUP 13	Fish Ladder and Supplemental Intake Structure	Fish Ladder and Supplemental Intake Structure						
8	321	GROUP 13	Fish Ladder and Supplemental Intake Structure	Fish Ladder and Supplemental Intake Structure	Concrete			83	4,029	2,266
8	322	GROUP 13	Fish Ladder and Supplemental Intake Structure	Fish Ladder and Supplemental Intake Structure	Reinforcing Steel			83	4,029	2,266
8	323	GROUP 13	Fish Ladder and Supplemental Intake Structure	Fish Ladder and Supplemental Intake Structure	Steel Grating			83	4,029	2,266
8	324	GROUP 13	Fish Ladder and Supplemental Intake Structure	Fish Ladder and Supplemental Intake Structure	Steel Slide Compression Gate			83	4,029	2,266
8	325	GROUP 13	Fish Ladder and Supplemental Intake Structure	Fish Ladder and Supplemental Intake Structure	Adjustable Steel Slot Weir			83	4,029	2,266
8	326	GROUP 13	Fish Ladder and Supplemental Intake Structure	Fish Ladder and Supplemental Intake Structure	Steel Slide Compression Gate for Pipe Diversion			83	4,029	2,266
8	327	GROUP 13	Fish Ladder and Supplemental Intake Structure	Fish Ladder and Supplemental Intake Structure	Steel Slide Compression Gate for Supplim. Flow Pipe			83	4,029	2,266
8	328	GROUP 13	Fish Ladder and Supplemental Intake Structure	Fish Ladder and Supplemental Intake Structure	Fish Screen			83	4,029	2,266

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
8	329	GROUP 13	Fish Ladder and Supplemental Intake Structure	Fish Ladder and Supplemental Intake Structure	Trash Rack			83	4,029	2,266
8	330	GROUP 13	Fish Ladder and Supplemental Intake Structure	Fish Ladder and Supplemental Intake Structure	Automated Trash Rack Screen Cleaner			83	4,029	2,266
8	331	GROUP 13	Fish Ladder and Supplemental Intake Structure	Fish Ladder and Supplemental Intake Structure	Steel Slide Gate Operator Control			83	4,029	2,266
8	332	GROUP 13	Fish Ladder and Supplemental Intake Structure	Fish Ladder and Supplemental Intake Structure	60" Diameter Steel Pipe			83	4,029	2,266
8	333	GROUP 13	Fish Ladder and Supplemental Intake Structure	Fish Ladder and Supplemental Intake Structure	84" Diameter Steel Pipe			84	4,462	2,509
8	334	GROUP 13	Fish Ladder and Supplemental Intake Structure	Fish Ladder and Supplemental Intake Structure	Mobilization			80	2,963	1,666
8	468	GROUP 14	Fresno Slough Dam							
8	469	GROUP 14	Fresno Slough Dam	SJR Control Structure						
8	470	GROUP 14	Fresno Slough Dam	SJR Control Structure	Stage 1 - SJR Control & 1/2 Connection Embankment					
8	471	GROUP 14	Fresno Slough Dam	SJR Control Structure	Stage 1 - SJR Control & 1/2 Connection Embankment	Clearing & Grubbing		87	6,126	3,445
8	472	GROUP 14	Fresno Slough Dam	SJR Control Structure	Stage 1 - SJR Control & 1/2 Connection Embankment	Cofferdam		103	38,638	21,728
8	473	GROUP 14	Fresno Slough Dam	SJR Control Structure	Stage 1 - SJR Control & 1/2 Connection Embankment	Cofferdam Removal		103	38,638	21,728
8	474	GROUP 14	Fresno Slough Dam	SJR Control Structure	Stage 1 - SJR Control & 1/2 Connection Embankment	Cut-Off Wall (Sheet Piles)		103	38,638	21,728
8	475	GROUP 14	Fresno Slough Dam	SJR Control Structure	Stage 1 - SJR Control & 1/2 Connection Embankment	Dewatering		83	4,029	2,266
8	476	GROUP 14	Fresno Slough Dam	SJR Control Structure	Stage 1 - SJR Control & 1/2 Connection Embankment	Excavation To Stockpile		88	6,698	3,766
8	477	GROUP 14	Fresno Slough Dam	SJR Control Structure	Stage 1 - SJR Control & 1/2 Connection Embankment	Excavation To Disposal Off Site		88	6,698	3,766
8	478	GROUP 14	Fresno Slough Dam	SJR Control Structure	Stage 1 - SJR Control & 1/2 Connection Embankment	Gravel Base		88	6,698	3,766
8	479	GROUP 14	Fresno Slough Dam	SJR Control Structure	Stage 1 - SJR Control Structure					

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
8	480	GROUP 14	Fresno Slough Dam	SJR Control Structure	Stage 1 - SJR Control Structure	12" Square Concrete Piles		103	38,638	21,728
8	481	GROUP 14	Fresno Slough Dam	SJR Control Structure	Stage 1 - SJR Control Structure	Concrete		83	4,029	2,266
8	482	GROUP 14	Fresno Slough Dam	SJR Control Structure	Stage 1 - SJR Control Structure	Reinforcing Steel		83	4,029	2,266
8	483	GROUP 14	Fresno Slough Dam	SJR Control Structure	Stage 1 - SJR Control Structure	Carbon/Galvanized Steel		83	4,029	2,266
8	484	GROUP 14	Fresno Slough Dam	SJR Control Structure	Stage 1 - SJR Control Structure	Stainless Steel		83	4,029	2,266
8	485	GROUP 14	Fresno Slough Dam	SJR Control Structure	Stage 1 - SJR Control Structure	Pipe Handrail		83	4,029	2,266
8	486	GROUP 14	Fresno Slough Dam	SJR Control Structure	Stage 1 - SJR Control Structure	Guardrail		83	4,029	2,266
8	487	GROUP 14	Fresno Slough Dam	SJR Control Structure	Stage 1 - SJR Control Radial Gates					
8	488	GROUP 14	Fresno Slough Dam	SJR Control Structure	Stage 1 - SJR Control Radial Gates	Tainter Gate Steel		83	4,029	2,266
8	489	GROUP 14	Fresno Slough Dam	SJR Control Structure	Stage 1 - SJR Control Radial Gates	Motor Operated Hoist W/Wire Ropes		83	4,029	2,266
8	490	GROUP 14	Fresno Slough Dam	SJR Control Structure	Stage 1 - SJR Control Radial Gates	Trash Rack - Miscellaneous Steel		83	4,029	2,266
8	491	GROUP 14	Fresno Slough Dam	SJR Control Structure	Stage 1 - SJR Control Radial Gates	Trash Rack - Stainless Steel		83	4,029	2,266
8	492	GROUP 14	Fresno Slough Dam	SJR Control Structure	Stage 1 - SJR Control Radial Gates	Trash Rack - Nelson Studs		83	4,029	2,266
8	493	GROUP 14	Fresno Slough Dam	SJR Control Structure	Stage 1 - SJR Control Radial Gates	Trashrake Units		83	4,029	2,266
8	494	GROUP 14	Fresno Slough Dam	SJR Control Structure	Stage 1 - SJR Control Radial Gates	Trashrake - Structure Support Steel		83	4,029	2,266
8	495	GROUP 14	Fresno Slough Dam	SJR Control Structure	Stage 1 - SJR Control Radial Gates	Rock Slope Protection		83	4,029	2,266
8	496	GROUP 14	Fresno Slough Dam	SJR Control Structure	Stage 1 - 1/2 Connection Embankment					
8	497	GROUP 14	Fresno Slough Dam	SJR Control Structure	Stage 1 - 1/2 Connection Embankment	Compacted Embankment - From Stockpile		88	6,698	3,766
8	498	GROUP 14	Fresno Slough Dam	SJR Control Structure	Stage 1 - 1/2 Connection Embankment	Compacted Embankment - Core Material		88	6,698	3,766
8	499	GROUP 14	Fresno Slough Dam	SJR Control Structure	Stage 1 - 1/2 Connection Embankment	Geotextile Fabric		80	2,963	1,666
8	500	GROUP 14	Fresno Slough Dam	SJR Control Structure	Stage 1 - 1/2 Connection Embankment	9" Bedding		84	4,337	2,439
8	501	GROUP 14	Fresno Slough Dam	SJR Control Structure	Stage 1 - 1/2 Connection Embankment	Stone Slope Protection, Type 1		83	4,029	2,266
8	502	GROUP 14	Fresno Slough Dam	SJR Control Structure	Stage 1 - 1/2 Connection	Access Road (4" AC / 6" AB, 24' Wide)		88	6,698	3,766

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
					Embankment					
8	503	GROUP 14	Fresno Slough Dam	SJR Control Structure	Stage 1 - 1/2 Connection Embankment	Chain Link Fence W/Barbed Wire		80	2,963	1,666
8	504	GROUP 14	Fresno Slough Dam	SJR Control Structure	Stage 1 - 1/2 Connection Embankment	Automatic Entrance Gate		81	3,070	1,727
8	505	GROUP 14	Fresno Slough Dam	SJR Control Structure	Stage 2 - Wing Embankment					
8	506	GROUP 14	Fresno Slough Dam	SJR Control Structure	Stage 2 - Wing Embankment	Compacted Embankment From Stockpile		88	6,698	3,766
8	507	GROUP 14	Fresno Slough Dam	SJR Control Structure	Stage 2 - Wing Embankment	Compacted Embankment - Core Material		88	6,698	3,766
8	508	GROUP 14	Fresno Slough Dam	SJR Control Structure	Stage 2 - Wing Embankment	Geotextile Fabric		80	2,963	1,666
8	509	GROUP 14	Fresno Slough Dam	SJR Control Structure	Stage 2 - Wing Embankment	9" Bedding		84	4,337	2,439
8	510	GROUP 14	Fresno Slough Dam	SJR Control Structure	Stage 2 - Wing Embankment	Stone Slope Protection, Type 1		83	4,029	2,266
8	511	GROUP 14	Fresno Slough Dam	SJR Control Structure	Stage 2 - Wing Embankment	Access Road (4" AC / 6" AB, 24' Wide)		88	6,698	3,766
8	512	GROUP 14	Fresno Slough Dam	SJR Control Structure	Stage 2 - Wing Embankment	Chain Link Fence W/Barbed Wire		80	2,963	1,666
8	513	GROUP 14	Fresno Slough Dam	SJR Control Structure	Stage 2 - Wing Embankment	Automatic Entrance Gate		81	3,070	1,727
8	514	GROUP 14	Fresno Slough Dam	SJR Control Structure	Stage 2 - Wing Embankment	Mobilization		80	2,963	1,666
8	515	GROUP 14	Fresno Slough Dam	SJR Control Structure	Fish Ladder Preparation					
8	516	GROUP 14	Fresno Slough Dam	SJR Control Structure	Fish Ladder Preparation	Clearing & Grubbing		87	6,126	3,445
8	517	GROUP 14	Fresno Slough Dam	SJR Control Structure	Fish Ladder Preparation	Cofferdam		103	38,638	21,728
8	518	GROUP 14	Fresno Slough Dam	SJR Control Structure	Fish Ladder Preparation	Cofferdam Removal		103	38,638	21,728
8	519	GROUP 14	Fresno Slough Dam	SJR Control Structure	Fish Ladder Preparation	Cut-Off Wall (Sheet Piles)		103	38,638	21,728
8	520	GROUP 14	Fresno Slough Dam	SJR Control Structure	Fish Ladder Preparation	Dewatering		83	4,029	2,266
8	521	GROUP 14	Fresno Slough Dam	SJR Control Structure	Fish Ladder Preparation	Excavation To Stockpile		88	6,698	3,766
8	522	GROUP 14	Fresno Slough Dam	SJR Control Structure	Fish Ladder Preparation	Excavation To Disposal Off Site		88	6,698	3,766
8	523	GROUP 14	Fresno Slough Dam	SJR Control Structure	Fish Ladder Preparation	Gravel Base		88	6,698	3,766
8	524	GROUP 14	Fresno Slough Dam	SJR Control Structure	Fish Ladder & Supplemental Intake Structure					
8	525	GROUP 14	Fresno Slough Dam	SJR Control Structure	Fish Ladder & Supplemental Intake Structure	Concrete		83	4,029	2,266

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
8	526	GROUP 14	Fresno Slough Dam	SJR Control Structure	Fish Ladder & Supplemental Intake Structure	Reinforcing Steel		83	4,029	2,266
8	527	GROUP 14	Fresno Slough Dam	SJR Control Structure	Fish Ladder & Supplemental Intake Structure	Steel Grating		83	4,029	2,266
8	528	GROUP 14	Fresno Slough Dam	SJR Control Structure	Fish Ladder & Supplemental Intake Structure	Steel Slide Compression Gate		83	4,029	2,266
8	529	GROUP 14	Fresno Slough Dam	SJR Control Structure	Fish Ladder & Supplemental Intake Structure	Adjustable Steel Slot Weir		83	4,029	2,266
8	530	GROUP 14	Fresno Slough Dam	SJR Control Structure	Fish Ladder & Supplemental Intake Structure	Steel Slide Compression Gate for Pipe Diversion		83	4,029	2,266
8	531	GROUP 14	Fresno Slough Dam	SJR Control Structure	Fish Ladder & Supplemental Intake Structure	Steel Slide Compression Gate for Supplim. Flow Pipe		83	4,029	2,266
8	532	GROUP 14	Fresno Slough Dam	SJR Control Structure	Fish Ladder & Supplemental Intake Structure	Fish Screen		83	4,029	2,266
8	533	GROUP 14	Fresno Slough Dam	SJR Control Structure	Fish Ladder & Supplemental Intake Structure	Trash Rack		83	4,029	2,266
8	534	GROUP 14	Fresno Slough Dam	SJR Control Structure	Fish Ladder & Supplemental Intake Structure	Automated Trash Rack Screen Cleaner		83	4,029	2,266
8	535	GROUP 14	Fresno Slough Dam	SJR Control Structure	Fish Ladder & Supplemental Intake Structure	Steel Slide Gate Operator Control		81	3,070	1,727
8	536	GROUP 14	Fresno Slough Dam	SJR Control Structure	Fish Ladder & Supplemental Intake Structure	60" Steel Pipe		83	4,029	2,266
8	537	GROUP 14	Fresno Slough Dam	SJR Control Structure	Fish Ladder & Supplemental Intake Structure	84" Steel Pipe		83	4,029	2,266
8	538	GROUP 14	Fresno Slough Dam	SJR Control Structure	Fish Ladder & Supplemental Intake Structure	Mobilization		80	2,963	1,666
8	539	GROUP 15	Fresno Slough Dam							
8	540	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen						
8	541	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Fish Screen Earthwork					
8	542	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Fish Screen Earthwork	Clearing & Grubbing		87	6,126	3,445

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
8	543	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Fish Screen Earthwork	Cofferdam		103	38,638	21,728
8	544	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Fish Screen Earthwork	Cofferdam Removal		103	38,638	21,728
8	545	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Fish Screen Earthwork	Cut-Off Wall (Sheet Piles)		103	38,638	21,728
8	546	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Fish Screen Earthwork	Dewatering		83	4,029	2,266
8	547	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Fish Screen Earthwork	Excavation To Stockpile		88	6,698	3,766
8	548	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Fish Screen Earthwork	Excavation To Disposal Off Site		88	6,698	3,766
8	549	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Fish Screen Earthwork	Gravel Base		88	6,698	3,766
8	550	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Fish Screen Structure					
8	551	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Fish Screen Structure	Concrete		83	4,029	2,266
8	552	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Fish Screen Structure	Reinforcing Steel		83	4,029	2,266
8	553	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Fish Screen Structure	Miscellaneous Metals		83	4,029	2,266
8	554	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Fish Screen Structure	Steel Members		83	4,029	2,266
8	555	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Fish Screen Structure	Fish Screen		83	4,029	2,266
8	556	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Fish Screen Structure	Adjustable Baffles		83	4,029	2,266
8	557	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Fish Screen Structure	Automated Screen Brush Cleaners		83	4,029	2,266
8	558	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Fish Screen Structure	Scour Protection		83	4,029	2,266
8	559	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Fish Screen Structure	Electric Winches For Vertical Slide Gates		83	4,029	2,266

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
8	560	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Connection Embankments For Fish Screen					
8	561	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Connection Embankments For Fish Screen	Compacted Embankment - From Stockpile		88	6,698	3,766
8	562	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Connection Embankments For Fish Screen	Compacted Embankment - Core Material		88	6,698	3,766
8	563	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Connection Embankments For Fish Screen	Geotextile Fabric		80	2,963	1,666
8	564	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Connection Embankments For Fish Screen	9" Bedding		84	4,337	2,439
8	565	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Connection Embankments For Fish Screen	Stone Slope Protection, Type 1		83	4,029	2,266
8	566	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Connection Embankments For Fish Screen	Access Road (4" AC / 6" AB, 24' Wide)		88	6,698	3,766
8	567	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Connection Embankments For Fish Screen	Chain Link Fence W/Barbed Wire		80	2,963	1,666
8	568	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Connection Embankments For Fish Screen	Automatic Entrance Gate		81	3,070	1,727
8	569	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Fish Screen Outlet Structure					
8	570	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Fish Screen Outlet Structure	Concrete		83	4,029	2,266
8	571	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Fish Screen Outlet Structure	Reinforcing Steel		83	4,029	2,266
8	572	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Fish Screen Outlet Structure	48" Steel Pipe		83	4,029	2,266
8	573	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Fish Screen Outlet Structure	Mobilization		80	2,963	1,666
8	574	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Bypass Channel Control Structure					
8	575	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Bypass Channel Control Structure	Clearing & Grubbing		87	6,126	3,445
8	576	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Bypass Channel Control Structure	Excavation To Stockpile		88	6,698	3,766

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
8	577	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Bypass Channel Control Structure	Excavation To Disposal Off Site		88	6,698	3,766
8	578	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Bypass Channel Control Structure	Cut-Off Wall (Sheet Piles)		103	38,638	21,728
8	579	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Bypass Channel Control Structure					
8	580	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Bypass Channel Control Structure	12" Square Concrete Piles		103	38,638	21,728
8	581	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Bypass Channel Control Structure	Concrete		83	4,029	2,266
8	582	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Bypass Channel Control Structure	Reinforcing Steel		83	4,029	2,266
8	583	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Bypass Channel Control Structure	Carbon/Galvanized Steel		83	4,029	2,266
8	584	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Bypass Channel Control Structure	Stainless Steel		83	4,029	2,266
8	585	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Bypass Channel Control Structure	Pipe Handrail		83	4,029	2,266
8	586	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Bypass Channel Control Structure	Guardrail		83	4,029	2,266
8	587	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Bypass Control Radial Gates					
8	588	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Bypass Control Radial Gates	Tainter Gate Steel		83	4,029	2,266
8	589	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Bypass Control Radial Gates	Motor Operated Hoist W/Wire Ropes		83	4,029	2,266
8	590	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Bypass Control Radial Gates	Trash Rack - Miscellaneous Steel		83	4,029	2,266
8	591	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Bypass Control Radial Gates	Trash Rack - Stainless Steel		83	4,029	2,266
8	592	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Bypass Control Radial Gates	Trash Rack - Nelson Suds		83	4,029	2,266
8	593	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Bypass Control Radial Gates	Trashrake Units		83	4,029	2,266

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
8	594	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Bypass Control Radial Gates	Trashrake - Structural Support Steel		83	4,029	2,266
8	595	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Bypass Control Radial Gates	Rock Slope Protection		83	4,029	2,266
8	596	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Bypass Control Embankments					
8	597	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Bypass Control Embankments	Compacted Embankment - From Stockpile		88	6,698	3,766
8	598	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Bypass Control Embankments	Compacted Embankment - Core Material		88	6,698	3,766
8	599	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Bypass Control Embankments	Access Road (4" AC / 6" AB, 24' Wide)		88	6,698	3,766
8	600	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Bypass Control Embankments	Chain Link Fence W/Barbed Wire		80	2,963	1,666
8	601	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Bypass Control Embankments	Automated Entrance Gate		81	3,070	1,727
8	602	GROUP 15	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Bypass Control Embankments	Mobilization		80	2,963	1,666
8	167	GROUP 16	Vegetation & Irrigation							
8	168	GROUP 16	Vegetation & Irrigation	General Description						
8	169	GROUP 16	Vegetation & Irrigation	General Description	Plant Establishment (12 Months)			81	3,070	1,727
8	170	GROUP 16	Vegetation & Irrigation	General Description	Landscape Maintenance (12 Months Or As Needed)			81	3,070	1,727
8	171	GROUP 16	Vegetation & Irrigation	General Description	Agricultural Topsoil (6" Layer)			88	6,698	3,766
8	172	GROUP 16	Vegetation & Irrigation	General Description	Erosion Control Fabric			80	2,963	1,666
8	173	GROUP 16	Vegetation & Irrigation	General Description	Irrigation System			81	3,070	1,727
8	174	GROUP 16	Vegetation & Irrigation	General Description	Beaver Fence			80	2,963	1,666
8	175	GROUP 16	Vegetation & Irrigation	General Description	Seeding			88	6,698	3,766
8	176	GROUP 16	Vegetation & Irrigation	General Description	Pole Cuttings			80	2,963	1,666
8	177	GROUP 16	Vegetation & Irrigation	General Description	Fascine Bundle			80	2,963	1,666

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
8	178	GROUP 16	Vegetation & Irrigation	General Description	Instream Woody Material			80	2,963	1,666
8	182	GROUP 16	Vegetation & Irrigation	General Description	Treepot Installation T4 - Cbm			81	3,070	1,727
8	183	GROUP 16	Vegetation & Irrigation	General Description	Treepot Installation DP - Cmb			81	3,070	1,727
8	184	GROUP 16	Vegetation & Irrigation	General Description	Treepot Installation DP - Crg			81	3,070	1,727
8	185	GROUP 16	Vegetation & Irrigation	General Description	Treepot Installation DP - Rbh			81	3,070	1,727
8	186	GROUP 16	Vegetation & Irrigation	General Description	Treepot Installation DP - Sgf			81	3,070	1,727
8	189	GROUP 16	Vegetation & Irrigation	General Description	Treepot Installation D6 - Swt			81	3,070	1,727
8	190	GROUP 16	Vegetation & Irrigation	General Description	Treepot Installation D6 - Bwt			81	3,070	1,727
8	191	GROUP 16	Vegetation & Irrigation	General Description	Mobilization			80	2,963	1,666
9	1	GROUP 1	Levee Construction							
9	2	GROUP 1	Levee Construction	Levee Preparation						
9	3	GROUP 1	Levee Construction	Levee Preparation	Clearing & Grubbing			87	6,126	3,445
9	4	GROUP 1	Levee Construction	Levee Preparation	Tree Removal			87	6,126	3,445
9	5	GROUP 1	Levee Construction	Right Setback Levee						
9	6	GROUP 1	Levee Construction	Right Setback Levee	Compacted Embankment			88	6,698	3,766
9	7	GROUP 1	Levee Construction	Right Setback Levee	Slurry Wall (100 Percent Of Total Levee Length)			87	6,126	3,445
9	8	GROUP 1	Levee Construction	Right Setback Levee	USACE Trench Foundation			88	6,698	3,766
9	9	GROUP 1	Levee Construction	Right Setback Levee	Borrow Excavation (< 1 Mile)			88	6,698	3,766
9	10	GROUP 1	Levee Construction	Left Setback Levee						
9	11	GROUP 1	Levee Construction	Left Setback Levee	Compacted Embankment			88	6,698	3,766
9	12	GROUP 1	Levee Construction	Left Setback Levee	Slurry Wall (100 Percent Of Total Levee Length)			87	6,126	3,445
9	13	GROUP 1	Levee Construction	Left Setback Levee	USACE Trench Foundation			88	6,698	3,766
9	14	GROUP 1	Levee Construction	Left Setback Levee	Borrow Excavation (< 1 Mile)			88	6,698	3,766
9	15	GROUP 1	Levee Construction	General						
9	16	GROUP 1	Levee Construction	General	Seeding (Levee Slopes)			88	6,698	3,766
9	17	GROUP 1	Levee Construction	General	Ramps & Turnabouts			88	6,698	3,766
9	18	GROUP 1	Levee Construction	General	Right Levee Aggregate Base Roadway			88	6,698	3,766
9	19	GROUP 1	Levee Construction	General	Left Levee Aggregate Base Roadway			88	6,698	3,766

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
9	20	GROUP 1	Levee Construction	General	Haul Excess Material By Truck <20 Miles (Drainage Channel)			88	6,698	3,766
9	21	GROUP 1	Levee Construction	General	Mobilization			80	2,963	1,666
9	35	GROUP 2	Levee Removal							
9	36	GROUP 2	Levee Removal	Excavation of Levee and Haul Excess Material By Truck <20 Miles				88	6,698	3,766
9	37	GROUP 2	Levee Removal	Mobilization				80	2,963	1,666
9	33	GROUP 3	Levee Revetment	Revetment Per Linear Foot	Rock Slope - Labor	Revetment Subtotal Per Linear Foot (Subtotal 24 To 33)		87	6,126	3,445
9	34	GROUP 3	Levee Revetment	Revetment Per Linear Foot	Mobilization			80	2,963	1,666
9	84	GROUP 4	Fresno Slough Dam							
9	85	GROUP 4	Fresno Slough Dam	Initial Stage						
9	86	GROUP 4	Fresno Slough Dam	Initial Stage	Clearing & Grubbing			87	6,126	3,445
9	87	GROUP 4	Fresno Slough Dam	Initial Stage	Soil Remediation			88	6,698	3,766
9	88	GROUP 4	Fresno Slough Dam	Initial Stage	Cut-Off Wall (Secant Piles)			84	4,462	2,509
9	89	GROUP 4	Fresno Slough Dam	Initial Stage	Upstream Right Bank Excavation			88	6,698	3,766
9	90	GROUP 4	Fresno Slough Dam	Stage 1 - Dam Spillway Structure						
9	91	GROUP 4	Fresno Slough Dam	Stage 1 - Dam Spillway Structure	Cofferdam			103	38,638	21,728
9	92	GROUP 4	Fresno Slough Dam	Stage 1 - Dam Spillway Structure	Cofferdam Removal			103	38,638	21,728
9	93	GROUP 4	Fresno Slough Dam	Stage 1 - Dam Spillway Structure	Dewatering			83	4,029	2,266
9	94	GROUP 4	Fresno Slough Dam	Stage 1 - Dam Spillway Structure	Excavation To Stockpile			88	6,698	3,766
9	95	GROUP 4	Fresno Slough Dam	Stage 1 - Dam Spillway Structure	Excavation To Disposal Off Site			88	6,698	3,766
9	96	GROUP 4	Fresno Slough Dam	Stage 1 - Dam Spillway Structure	Tremie Concrete			83	4,029	2,266
9	97	GROUP 4	Fresno Slough Dam	Stage 1 - Dam Spillway Structure	Gravel			88	6,698	3,766
9	98	GROUP 4	Fresno Slough Dam	Stage 1 - Dam Spillway Structure	Concrete			83	4,029	2,266
9	99	GROUP 4	Fresno Slough Dam	Stage 1 - Dam Spillway Structure	Reinforcing Steel			83	4,029	2,266
9	100	GROUP 4	Fresno Slough Dam	Stage 1 - Dam Spillway Structure	Guardrail			83	4,029	2,266
9	101	GROUP 4	Fresno Slough Dam	Radial Gates (Spillway Structure)						
9	102	GROUP 4	Fresno Slough Dam	Radial Gates (Spillway Structure)	Radial Gates			83	4,029	2,266

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
9	103	GROUP 4	Fresno Slough Dam	Radial Gates (Spillway Structure)	Motor Operated Hoist W/Wire Ropes			83	4,029	2,266
9	104	GROUP 4	Fresno Slough Dam	Radial Gates (Spillway Structure)	Embedded Metal (Stainless Steel)			83	4,029	2,266
9	105	GROUP 4	Fresno Slough Dam	Radial Gates (Spillway Structure)	Railing			83	4,029	2,266
9	106	GROUP 4	Fresno Slough Dam	Radial Gates (Spillway Structure)	Riprap			83	4,029	2,266
9	107	GROUP 4	Fresno Slough Dam	Radial Gates (Spillway Structure)	Stoplog			83	4,029	2,266
9	108	GROUP 4	Fresno Slough Dam	Radial Gates (Spillway Structure)	Water Velocity & Flow Measuring System			81	3,070	1,727
9	109	GROUP 4	Fresno Slough Dam	Radial Gates (Spillway Structure)	Propane Tank & Enclosure			80	2,963	1,666
9	110	GROUP 4	Fresno Slough Dam	Stage 2 - Earthen Embankment Left						
9	111	GROUP 4	Fresno Slough Dam	Stage 2 - Earthen Embankment Left	Cofferdam			103	38,638	21,728
9	112	GROUP 4	Fresno Slough Dam	Stage 2 - Earthen Embankment Left	Cofferdam Removal			103	38,638	21,728
9	113	GROUP 4	Fresno Slough Dam	Stage 2 - Earthen Embankment Left	Dewatering			83	4,029	2,266
9	114	GROUP 4	Fresno Slough Dam	Stage 2 - Earthen Embankment Left	Excavation To Stockpile			88	6,698	3,766
9	115	GROUP 4	Fresno Slough Dam	Stage 2 - Earthen Embankment Left	Excavation To Disposal Off Site			88	6,698	3,766
9	116	GROUP 4	Fresno Slough Dam	Stage 2 - Earthen Embankment Left	Tremie Concrete			83	4,029	2,266
9	117	GROUP 4	Fresno Slough Dam	Stage 2 - Earthen Embankment Left	Gravel			88	6,698	3,766
9	118	GROUP 4	Fresno Slough Dam	Stage 2 - Earthen Embankment Left	Compacted Embankment - From Stockpile			88	6,698	3,766
9	119	GROUP 4	Fresno Slough Dam	Stage 2 - Earthen Embankment Left	Compacted Embankment - Core Material			88	6,698	3,766
9	120	GROUP 4	Fresno Slough Dam	Stage 2 - Earthen Embankment Left	Geotextile Fabric			80	2,963	1,666
9	121	GROUP 4	Fresno Slough Dam	Stage 2 - Earthen Embankment Left	9" Bedding			84	4,337	2,439
9	122	GROUP 4	Fresno Slough Dam	Stage 2 - Earthen Embankment Left	Stone Slope Protection, Type 1			83	4,029	2,266
9	123	GROUP 4	Fresno Slough Dam	Stage 2 - Earthen Embankment Left	Access Road (4" AC / 6" AB, 24' Wide)			88	6,698	3,766
9	124	GROUP 4	Fresno Slough Dam	Stage 2 - Earthen Embankment Left	Chain Link Fence W/Barbed Wire			80	2,963	1,666
9	125	GROUP 4	Fresno Slough Dam	Stage 2 - Earthen Embankment Left	Pipe Handrail			83	4,029	2,266
9	126	GROUP 4	Fresno Slough Dam	Stage 2 - Earthen Embankment Left	Automatic Entrance Gate			81	3,070	1,727

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
9	127	GROUP 4	Fresno Slough Dam	Stage 3 - Earthen Embankment Right						
9	128	GROUP 4	Fresno Slough Dam	Stage 3 - Earthen Embankment Right	Cofferdam			103	38,638	21,728
9	129	GROUP 4	Fresno Slough Dam	Stage 3 - Earthen Embankment Right	Cofferdam Removal			103	38,638	21,728
9	130	GROUP 4	Fresno Slough Dam	Stage 3 - Earthen Embankment Right	Dewatering			83	4,029	2,266
9	131	GROUP 4	Fresno Slough Dam	Stage 3 - Earthen Embankment Right	Excavation To Stockpile			88	6,698	3,766
9	132	GROUP 4	Fresno Slough Dam	Stage 3 - Earthen Embankment Right	Excavation To Disposal Off Site			88	6,698	3,766
9	133	GROUP 4	Fresno Slough Dam	Stage 3 - Earthen Embankment Right	Tremie Concrete			83	4,029	2,266
9	134	GROUP 4	Fresno Slough Dam	Stage 3 - Earthen Embankment Right	Gravel			88	6,698	3,766
9	135	GROUP 4	Fresno Slough Dam	Stage 3 - Earthen Embankment Right	Compacted Embankment - From Stockpile			88	6,698	3,766
9	136	GROUP 4	Fresno Slough Dam	Stage 3 - Earthen Embankment Right	Compacted Embankment - Imported			88	6,698	3,766
9	137	GROUP 4	Fresno Slough Dam	Stage 3 - Earthen Embankment Right	Compacted Embankment - Core Material			88	6,698	3,766
9	138	GROUP 4	Fresno Slough Dam	Stage 3 - Earthen Embankment Right	Geotextile Fabric			80	2,963	1,666
9	139	GROUP 4	Fresno Slough Dam	Stage 3 - Earthen Embankment Right	9" Bedding			84	4,337	2,439
9	140	GROUP 4	Fresno Slough Dam	Stage 3 - Earthen Embankment Right	Stone Slope Protection, Type 1			83	4,029	2,266
9	141	GROUP 4	Fresno Slough Dam	Stage 3 - Earthen Embankment Right	Access Road (4" AC / 6" AB, 24' Wide)			88	6,698	3,766
9	142	GROUP 4	Fresno Slough Dam	Stage 3 - Earthen Embankment Right	Chain Link Fence W/Barbed Wire			80	2,963	1,666
9	143	GROUP 4	Fresno Slough Dam	Stage 3 - Earthen Embankment Right	Pipe Handrail			83	4,029	2,266
9	144	GROUP 4	Fresno Slough Dam	Stage 3 - Earthen Embankment Right	Automatic Entrance Gate			81	3,070	1,727
9	145	GROUP 4	Fresno Slough Dam	Stage 3 - Earthen Embankment Right	Mobilization			80	2,963	1,666
9	172	GROUP 5	Fresno Slough Dam							
9	173	GROUP 5	Fresno Slough Dam	SJR Control Structure						
9	174	GROUP 5	Fresno Slough Dam	SJR Control Structure	Stage 1 - SJR Control & 1/2 Connection Embankment					
9	175	GROUP 5	Fresno Slough Dam	SJR Control Structure	Stage 1 - SJR Control & 1/2 Connection Embankment	Clearing & Grubbing		87	6,126	3,445

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
9	176	GROUP 5	Fresno Slough Dam	SJR Control Structure	Stage 1 - SJR Control & 1/2 Connection Embankment	Cofferdam		103	38,638	21,728
9	177	GROUP 5	Fresno Slough Dam	SJR Control Structure	Stage 1 - SJR Control & 1/2 Connection Embankment	Cofferdam Removal		103	38,638	21,728
9	178	GROUP 5	Fresno Slough Dam	SJR Control Structure	Stage 1 - SJR Control & 1/2 Connection Embankment	Cut-Off Wall (Sheet Piles)		103	38,638	21,728
9	179	GROUP 5	Fresno Slough Dam	SJR Control Structure	Stage 1 - SJR Control & 1/2 Connection Embankment	Dewatering		83	4,029	2,266
9	180	GROUP 5	Fresno Slough Dam	SJR Control Structure	Stage 1 - SJR Control & 1/2 Connection Embankment	Excavation To Stockpile		88	6,698	3,766
9	181	GROUP 5	Fresno Slough Dam	SJR Control Structure	Stage 1 - SJR Control & 1/2 Connection Embankment	Excavation To Disposal Off Site		88	6,698	3,766
9	182	GROUP 5	Fresno Slough Dam	SJR Control Structure	Stage 1 - SJR Control & 1/2 Connection Embankment	Gravel Base		88	6,698	3,766
9	183	GROUP 5	Fresno Slough Dam	SJR Control Structure	Stage 1 - SJR Control Structure					
9	184	GROUP 5	Fresno Slough Dam	SJR Control Structure	Stage 1 - SJR Control Structure	12" Square Concrete Piles		103	38,638	21,728
9	185	GROUP 5	Fresno Slough Dam	SJR Control Structure	Stage 1 - SJR Control Structure	Concrete		83	4,029	2,266
9	186	GROUP 5	Fresno Slough Dam	SJR Control Structure	Stage 1 - SJR Control Structure	Reinforcing Steel		83	4,029	2,266
9	187	GROUP 5	Fresno Slough Dam	SJR Control Structure	Stage 1 - SJR Control Structure	Carbon/Galvanized Steel		83	4,029	2,266
9	188	GROUP 5	Fresno Slough Dam	SJR Control Structure	Stage 1 - SJR Control Structure	Stainless Steel		83	4,029	2,266
9	189	GROUP 5	Fresno Slough Dam	SJR Control Structure	Stage 1 - SJR Control Structure	Pipe Handrail		83	4,029	2,266
9	190	GROUP 5	Fresno Slough Dam	SJR Control Structure	Stage 1 - SJR Control Structure	Guardrail		83	4,029	2,266
9	191	GROUP 5	Fresno Slough Dam	SJR Control Structure	Stage 1 - SJR Control Radial Gates					
9	192	GROUP 5	Fresno Slough Dam	SJR Control Structure	Stage 1 - SJR Control Radial Gates	Tainter Gate Steel		83	4,029	2,266
9	193	GROUP 5	Fresno Slough Dam	SJR Control Structure	Stage 1 - SJR Control Radial Gates	Motor Operated Hoist W/Wire Ropes		83	4,029	2,266
9	194	GROUP 5	Fresno Slough Dam	SJR Control Structure	Stage 1 - SJR Control Radial Gates	Trash Rack - Miscellaneous Steel		83	4,029	2,266
9	195	GROUP 5	Fresno Slough Dam	SJR Control Structure	Stage 1 - SJR Control Radial Gates	Trash Rack - Stainless Steel		83	4,029	2,266
9	196	GROUP 5	Fresno Slough Dam	SJR Control Structure	Stage 1 - SJR Control Radial Gates	Trash Rack - Nelson Studs		83	4,029	2,266
9	197	GROUP 5	Fresno Slough Dam	SJR Control Structure	Stage 1 - SJR Control Radial Gates	Trashrake Units		83	4,029	2,266

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
9	198	GROUP 5	Fresno Slough Dam	SJR Control Structure	Stage 1 - SJR Control Radial Gates	Trashrake - Structure Support Steel		83	4,029	2,266
9	199	GROUP 5	Fresno Slough Dam	SJR Control Structure	Stage 1 - SJR Control Radial Gates	Rock Slope Protection		83	4,029	2,266
9	200	GROUP 5	Fresno Slough Dam	SJR Control Structure	Stage 1 - 1/2 Connection Embankment					
9	201	GROUP 5	Fresno Slough Dam	SJR Control Structure	Stage 1 - 1/2 Connection Embankment	Compacted Embankment - From Stockpile		88	6,698	3,766
9	202	GROUP 5	Fresno Slough Dam	SJR Control Structure	Stage 1 - 1/2 Connection Embankment	Compacted Embankment - Core Material		88	6,698	3,766
9	203	GROUP 5	Fresno Slough Dam	SJR Control Structure	Stage 1 - 1/2 Connection Embankment	Geotextile Fabric		80	2,963	1,666
9	204	GROUP 5	Fresno Slough Dam	SJR Control Structure	Stage 1 - 1/2 Connection Embankment	9" Bedding		84	4,337	2,439
9	205	GROUP 5	Fresno Slough Dam	SJR Control Structure	Stage 1 - 1/2 Connection Embankment	Stone Slope Protection, Type 1		83	4,029	2,266
9	206	GROUP 5	Fresno Slough Dam	SJR Control Structure	Stage 1 - 1/2 Connection Embankment	Access Road (4" AC / 6" AB, 24' Wide)		88	6,698	3,766
9	207	GROUP 5	Fresno Slough Dam	SJR Control Structure	Stage 1 - 1/2 Connection Embankment	Chain Link Fence W/Barbed Wire		80	2,963	1,666
9	208	GROUP 5	Fresno Slough Dam	SJR Control Structure	Stage 1 - 1/2 Connection Embankment	Automatic Entrance Gate		81	3,070	1,727
9	209	GROUP 5	Fresno Slough Dam	SJR Control Structure	Stage 2 - Wing Embankment					
9	210	GROUP 5	Fresno Slough Dam	SJR Control Structure	Stage 2 - Wing Embankment	Compacted Embankment From Stockpile		88	6,698	3,766
9	211	GROUP 5	Fresno Slough Dam	SJR Control Structure	Stage 2 - Wing Embankment	Compacted Embankment - Core Material		88	6,698	3,766
9	212	GROUP 5	Fresno Slough Dam	SJR Control Structure	Stage 2 - Wing Embankment	Geotextile Fabric		80	2,963	1,666
9	213	GROUP 5	Fresno Slough Dam	SJR Control Structure	Stage 2 - Wing Embankment	9" Bedding		84	4,337	2,439
9	214	GROUP 5	Fresno Slough Dam	SJR Control Structure	Stage 2 - Wing Embankment	Stone Slope Protection, Type 1		83	4,029	2,266
9	215	GROUP 5	Fresno Slough Dam	SJR Control Structure	Stage 2 - Wing Embankment	Access Road (4" AC / 6" AB, 24' Wide)		88	6,698	3,766
9	216	GROUP 5	Fresno Slough Dam	SJR Control Structure	Stage 2 - Wing Embankment	Chain Link Fence W/Barbed Wire		80	2,963	1,666
9	217	GROUP 5	Fresno Slough Dam	SJR Control Structure	Stage 2 - Wing Embankment	Automatic Entrance Gate		81	3,070	1,727
9	218	GROUP 5	Fresno Slough Dam	SJR Control Structure	Stage 2 - Wing Embankment	Mobilization		80	2,963	1,666

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
9	219	GROUP 5	Fresno Slough Dam	SJR Control Structure	Fish Ladder Preparation					
9	220	GROUP 5	Fresno Slough Dam	SJR Control Structure	Fish Ladder Preparation	Clearing & Grubbing		87	6,126	3,445
9	221	GROUP 5	Fresno Slough Dam	SJR Control Structure	Fish Ladder Preparation	Cofferdam		103	38,638	21,728
9	222	GROUP 5	Fresno Slough Dam	SJR Control Structure	Fish Ladder Preparation	Cofferdam Removal		103	38,638	21,728
9	223	GROUP 5	Fresno Slough Dam	SJR Control Structure	Fish Ladder Preparation	Cut-Off Wall (Sheet Piles)		103	38,638	21,728
9	224	GROUP 5	Fresno Slough Dam	SJR Control Structure	Fish Ladder Preparation	Dewatering		83	4,029	2,266
9	225	GROUP 5	Fresno Slough Dam	SJR Control Structure	Fish Ladder Preparation	Excavation To Stockpile		88	6,698	3,766
9	226	GROUP 5	Fresno Slough Dam	SJR Control Structure	Fish Ladder Preparation	Excavation To Disposal Off Site		88	6,698	3,766
9	227	GROUP 5	Fresno Slough Dam	SJR Control Structure	Fish Ladder Preparation	Gravel Base		88	6,698	3,766
9	229	GROUP 5	Fresno Slough Dam	SJR Control Structure	Fish Ladder & Supplemental Intake Structure	Concrete		83	4,029	2,266
9	230	GROUP 5	Fresno Slough Dam	SJR Control Structure	Fish Ladder & Supplemental Intake Structure	Reinforcing Steel		83	4,029	2,266
9	231	GROUP 5	Fresno Slough Dam	SJR Control Structure	Fish Ladder & Supplemental Intake Structure	Steel Grating		83	4,029	2,266
9	232	GROUP 5	Fresno Slough Dam	SJR Control Structure	Fish Ladder & Supplemental Intake Structure	Steel Slide Compression Gate		83	4,029	2,266
9	233	GROUP 5	Fresno Slough Dam	SJR Control Structure	Fish Ladder & Supplemental Intake Structure	Adjustable Steel Slot Weir		83	4,029	2,266
9	234	GROUP 5	Fresno Slough Dam	SJR Control Structure	Fish Ladder & Supplemental Intake Structure	Steel Slide Compression Gate for Pipe Diversion		83	4,029	2,266
9	235	GROUP 5	Fresno Slough Dam	SJR Control Structure	Fish Ladder & Supplemental Intake Structure	Steel Slide Compression Gate for Supplim. Flow Pipe		83	4,029	2,266
9	236	GROUP 5	Fresno Slough Dam	SJR Control Structure	Fish Ladder & Supplemental Intake Structure	Fish Screen		83	4,029	2,266
9	237	GROUP 5	Fresno Slough Dam	SJR Control Structure	Fish Ladder & Supplemental Intake Structure	Trash Rack		83	4,029	2,266
9	238	GROUP 5	Fresno Slough Dam	SJR Control Structure	Fish Ladder & Supplemental Intake Structure	Automated Trash Rack Screen Cleaner		83	4,029	2,266
9	239	GROUP 5	Fresno Slough Dam	SJR Control Structure	Fish Ladder & Supplemental Intake Structure	Steel Slide Gate Operator Control		81	3,070	1,727
9	240	GROUP 5	Fresno Slough Dam	SJR Control Structure	Fish Ladder & Supplemental Intake Structure	60" Steel Pipe		83	4,029	2,266

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
9	241	GROUP 5	Fresno Slough Dam	SJR Control Structure	Fish Ladder & Supplemental Intake Structure	84" Steel Pipe		83	4,029	2,266
9	242	GROUP 5	Fresno Slough Dam	SJR Control Structure	Fish Ladder & Supplemental Intake Structure	Mobilization		80	2,963	1,666
9	243	GROUP 6	Fresno Slough Dam							
9	244	GROUP 6	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen						
9	245	GROUP 6	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Fish Screen Earthwork					
9	246	GROUP 6	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Fish Screen Earthwork	Clearing & Grubbing		87	6,126	3,445
9	247	GROUP 6	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Fish Screen Earthwork	Cofferdam		103	38,638	21,728
9	248	GROUP 6	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Fish Screen Earthwork	Cofferdam Removal		103	38,638	21,728
9	249	GROUP 6	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Fish Screen Earthwork	Cut-Off Wall (Sheet Piles)		103	38,638	21,728
9	250	GROUP 6	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Fish Screen Earthwork	Dewatering		83	4,029	2,266
9	251	GROUP 6	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Fish Screen Earthwork	Excavation To Stockpile		88	6,698	3,766
9	252	GROUP 6	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Fish Screen Earthwork	Excavation To Disposal Off Site		88	6,698	3,766
9	253	GROUP 6	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Fish Screen Earthwork	Gravel Base		88	6,698	3,766
9	254	GROUP 6	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Fish Screen Structure					
9	255	GROUP 6	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Fish Screen Structure	Concrete		83	4,029	2,266
9	256	GROUP 6	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Fish Screen Structure	Reinforcing Steel		83	4,029	2,266
9	257	GROUP 6	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Fish Screen Structure	Miscellaneous Metals		83	4,029	2,266

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
9	258	GROUP 6	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Fish Screen Structure	Steel Members		83	4,029	2,266
9	259	GROUP 6	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Fish Screen Structure	Fish Screen		83	4,029	2,266
9	260	GROUP 6	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Fish Screen Structure	Adjustable Baffles		83	4,029	2,266
9	261	GROUP 6	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Fish Screen Structure	Automated Screen Brush Cleaners		83	4,029	2,266
9	262	GROUP 6	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Fish Screen Structure	Scour Protection		83	4,029	2,266
9	263	GROUP 6	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Fish Screen Structure	Electric Winches For Vertical Slide Gates		83	4,029	2,266
9	264	GROUP 6	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Connection Embankments For Fish Screen					
9	265	GROUP 6	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Connection Embankments For Fish Screen	Compacted Embankment - From Stockpile		88	6,698	3,766
9	266	GROUP 6	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Connection Embankments For Fish Screen	Compacted Embankment - Core Material		88	6,698	3,766
9	267	GROUP 6	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Connection Embankments For Fish Screen	Geotextile Fabric		80	2,963	1,666
9	268	GROUP 6	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Connection Embankments For Fish Screen	9" Bedding		84	4,337	2,439
9	269	GROUP 6	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Connection Embankments For Fish Screen	Stone Slope Protection, Type 1		83	4,029	2,266
9	270	GROUP 6	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Connection Embankments For Fish Screen	Access Road (4" AC / 6" AB, 24' Wide)		88	6,698	3,766
9	271	GROUP 6	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Connection Embankments For Fish Screen	Chain Link Fence W/Barbed Wire		80	2,963	1,666
9	272	GROUP 6	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Connection Embankments For Fish Screen	Automatic Entrance Gate		81	3,070	1,727
9	273	GROUP 6	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Fish Screen Outlet Structure					
9	274	GROUP 6	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Fish Screen Outlet Structure	Concrete		83	4,029	2,266

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
9	275	GROUP 6	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Fish Screen Outlet Structure	Reinforcing Steel		83	4,029	2,266
9	276	GROUP 6	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Fish Screen Outlet Structure	48" Steel Pipe		83	4,029	2,266
9	277	GROUP 6	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Fish Screen Outlet Structure	Mobilization		80	2,963	1,666
9	278	GROUP 6	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Bypass Channel Control Structure					
9	279	GROUP 6	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Bypass Channel Control Structure	Clearing & Grubbing		87	6,126	3,445
9	280	GROUP 6	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Bypass Channel Control Structure	Excavation To Stockpile		88	6,698	3,766
9	281	GROUP 6	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Bypass Channel Control Structure	Excavation To Disposal Off Site		88	6,698	3,766
9	282	GROUP 6	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Bypass Channel Control Structure	Cut-Off Wall (Sheet Piles)		103	38,638	21,728
9	283	GROUP 6	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Bypass Channel Control Structure					
9	284	GROUP 6	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Bypass Channel Control Structure	12" Square Concrete Piles		103	38,638	21,728
9	285	GROUP 6	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Bypass Channel Control Structure	Concrete		83	4,029	2,266
9	286	GROUP 6	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Bypass Channel Control Structure	Reinforcing Steel		83	4,029	2,266
9	287	GROUP 6	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Bypass Channel Control Structure	Carbon/Galvanized Steel		83	4,029	2,266
9	288	GROUP 6	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Bypass Channel Control Structure	Stainless Steel		83	4,029	2,266
9	289	GROUP 6	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Bypass Channel Control Structure	Pipe Handrail		83	4,029	2,266
9	290	GROUP 6	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Bypass Channel Control Structure	Guardrail		83	4,029	2,266
9	291	GROUP 6	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Bypass Control Radial Gates					

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
9	292	GROUP 6	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Bypass Control Radial Gates	Tainter Gate Steel		83	4,029	2,266
9	293	GROUP 6	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Bypass Control Radial Gates	Motor Operated Hoist W/Wire Ropes		83	4,029	2,266
9	294	GROUP 6	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Bypass Control Radial Gates	Trash Rack - Miscellaneous Steel		83	4,029	2,266
9	295	GROUP 6	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Bypass Control Radial Gates	Trash Rack - Stainless Steel		83	4,029	2,266
9	296	GROUP 6	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Bypass Control Radial Gates	Trash Rack - Nelson Suds		83	4,029	2,266
9	297	GROUP 6	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Bypass Control Radial Gates	Trashrake Units		83	4,029	2,266
9	298	GROUP 6	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Bypass Control Radial Gates	Trashrake - Structural Support Steel		83	4,029	2,266
9	299	GROUP 6	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Bypass Control Radial Gates	Rock Slope Protection		83	4,029	2,266
9	300	GROUP 6	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Bypass Control Embankments					
9	301	GROUP 6	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Bypass Control Embankments	Compacted Embankment - From Stockpile		88	6,698	3,766
9	302	GROUP 6	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Bypass Control Embankments	Compacted Embankment - Core Material		88	6,698	3,766
9	303	GROUP 6	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Bypass Control Embankments	Access Road (4" AC / 6" AB, 24' Wide)		88	6,698	3,766
9	304	GROUP 6	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Bypass Control Embankments	Chain Link Fence W/Barbed Wire		80	2,963	1,666
9	305	GROUP 6	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Bypass Control Embankments	Automated Entrance Gate		81	3,070	1,727
9	306	GROUP 6	Fresno Slough Dam	Bypass Canal - North & South Options Fish Screen	Bypass Control Embankments	Mobilization		80	2,963	1,666
9	146	GROUP 7	Fresno Slough Dam							
9	147	GROUP 7	Fresno Slough Dam	Channel Excavation						
9	148	GROUP 7	Fresno Slough Dam	Channel Excavation	Excavation (Bulldozer)			88	6,698	3,766

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
9	149	GROUP 7	Fresno Slough Dam	Channel Excavation	Excavation & Haul Material By Truck (<20 Miles)			88	6,698	3,766
9	150	GROUP 7	Fresno Slough Dam	Channel Excavation	Mobilization			80	2,963	1,666
9	151	GROUP 8	Fresno Slough Dam							
9	152	GROUP 8	Fresno Slough Dam	San Joaquin River Bypass Canal South Option Lined						
9	153	GROUP 8	Fresno Slough Dam	San Joaquin River Bypass Canal South Option Lined	General					
9	154	GROUP 8	Fresno Slough Dam	San Joaquin River Bypass Canal South Option Lined	General	Clearing & Grubbing		87	6,126	3,445
9	155	GROUP 8	Fresno Slough Dam	San Joaquin River Bypass Canal South Option Lined	General	Water For Dust Abatement		79	2,376	1,336
9	156	GROUP 8	Fresno Slough Dam	San Joaquin River Bypass Canal South Option Lined	General	SWPPP		75	1,581	889
9	157	GROUP 8	Fresno Slough Dam	San Joaquin River Bypass Canal South Option Lined	General	Worker Protection		82	3,529	1,984
9	158	GROUP 8	Fresno Slough Dam	San Joaquin River Bypass Canal South Option Lined	General	Bridge (30'x165')		83	4,029	2,266
9	159	GROUP 8	Fresno Slough Dam	San Joaquin River Bypass Canal South Option Lined	General	Bridge Appurtenances		83	4,029	2,266
9	160	GROUP 8	Fresno Slough Dam	San Joaquin River Bypass Canal South Option Lined	Canal Excavation					
9	161	GROUP 8	Fresno Slough Dam	San Joaquin River Bypass Canal South Option Lined	Canal Excavation	Course Canal Excavation (Loader & Dozer)		88	6,698	3,766
9	162	GROUP 8	Fresno Slough Dam	San Joaquin River Bypass Canal South Option Lined	Canal Excavation	Haul Off Site (<20 Miles, Main Canal)		88	6,698	3,766
9	163	GROUP 8	Fresno Slough Dam	San Joaquin River Bypass Canal South Option Lined	Canal Excavation	Concrete Liner @ 6" Thick		84	4,462	2,509
9	164	GROUP 8	Fresno Slough Dam	San Joaquin River Bypass Canal South Option Lined	Canal Excavation	Riprap Approach (25' x bottom Canal Width)		83	4,029	2,266
9	165	GROUP 8	Fresno Slough Dam	San Joaquin River Bypass Canal South Option Lined	Levee Construction (Left & Right)					
9	166	GROUP 8	Fresno Slough Dam	San Joaquin River Bypass Canal South Option Lined	Levee Construction (Left & Right)	Compacted Embankment		88	6,698	3,766

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
9	167	GROUP 8	Fresno Slough Dam	San Joaquin River Bypass Canal South Option Lined	Levee Construction (Left & Right)	Inspection Trench (20% Of Levee Length)		88	6,698	3,766
9	168	GROUP 8	Fresno Slough Dam	San Joaquin River Bypass Canal South Option Lined	Levee Construction (Left & Right)	Seeding (Levee Slopes)		88	6,698	3,766
9	169	GROUP 8	Fresno Slough Dam	San Joaquin River Bypass Canal South Option Lined	Levee Construction (Left & Right)	Ramps & Turnabouts		88	6,698	3,766
9	170	GROUP 8	Fresno Slough Dam	San Joaquin River Bypass Canal South Option Lined	Levee Construction (Left & Right)	Levee Aggregate Base Roadway		88	6,698	3,766
9	171	GROUP 8	Fresno Slough Dam	San Joaquin River Bypass Canal South Option Lined	Levee Construction (Left & Right)	Mobilization		80	2,963	1,666
9	471	GROUP 9	MPBC Initial Alternative 3 FSD Mendota Dam Retrofits							
9	472	GROUP 9	MPBC Initial Alternative 3 FSD Mendota Dam Retrofits	Drop Structure (Weir 1)						
9	473	GROUP 9	MPBC Initial Alternative 3 FSD Mendota Dam Retrofits	Drop Structure (Weir 1)	Grade Control Structure Cost (Single Structure)					
9	474	GROUP 9	MPBC Initial Alternative 3 FSD Mendota Dam Retrofits	Drop Structure (Weir 1)	Grade Control Structure Cost (Single Structure)	Clearing & Grubbing		87	6,126	3,445
9	475	GROUP 9	MPBC Initial Alternative 3 FSD Mendota Dam Retrofits	Drop Structure (Weir 1)	Grade Control Structure Cost (Single Structure)	Onsite Earthwork For Anchor Systems (Remove & Recompact)		84	4,462	2,509
9	477	GROUP 9	MPBC Initial Alternative 3 FSD Mendota Dam Retrofits	Drop Structure (Weir 1)	Grade Control Structure Cost (Single Structure)	Deliver Materials (CMI Atlanta GA, 1 Truck)		76	1,774	998
9	478	GROUP 9	MPBC Initial Alternative 3 FSD Mendota Dam Retrofits	Drop Structure (Weir 1)	Grade Control Structure Cost (Single Structure)	Construct Driving Guide & Use As Wales		83	4,029	2,266
9	479	GROUP 9	MPBC Initial Alternative 3 FSD Mendota Dam Retrofits	Drop Structure (Weir 1)	Grade Control Structure Cost (Single Structure)	Sheet Pile Installation (Single Sheet 20'x420')		103	38,638	21,728
9	480	GROUP 9	MPBC Initial Alternative 3 FSD Mendota Dam Retrofits	Drop Structure (Weir 1)	Grade Control Structure Cost (Single Structure)	Caps For Tops (20' Lengths Material & Labor)		83	4,029	2,266

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
9	481	GROUP 9	MPBC Initial Alternative 3 FSD Mendota Dam Retrofits	Drop Structure (Weir 1)	Grade Control Structure Cost (Single Structure)	Anchor Support System (Pilings, Cable, Wales, Etc)		83	4,029	2,266
9	482	GROUP 9	MPBC Initial Alternative 3 FSD Mendota Dam Retrofits	Drop Structure (Weir 1)	Grade Control Structure Cost (Single Structure)	Dust Control		79	2,376	1,336
9	483	GROUP 9	MPBC Initial Alternative 3 FSD Mendota Dam Retrofits	Drop Structure (Weir 2)						
9	484	GROUP 9	MPBC Initial Alternative 3 FSD Mendota Dam Retrofits	Drop Structure (Weir 2)	Grade Control Structure Cost (Single Structure)					
9	485	GROUP 9	MPBC Initial Alternative 3 FSD Mendota Dam Retrofits	Drop Structure (Weir 2)	Grade Control Structure Cost (Single Structure)	Clearing & Grubbing		87	6,126	3,445
9	486	GROUP 9	MPBC Initial Alternative 3 FSD Mendota Dam Retrofits	Drop Structure (Weir 2)	Grade Control Structure Cost (Single Structure)	Onsite Earthwork For Anchor Systems (Remove & Recompact)		84	4,462	2,509
9	488	GROUP 9	MPBC Initial Alternative 3 FSD Mendota Dam Retrofits	Drop Structure (Weir 2)	Grade Control Structure Cost (Single Structure)	Deliver Materials (CMI Atlanta GA, 2 Trucks)		76	1,774	998
9	489	GROUP 9	MPBC Initial Alternative 3 FSD Mendota Dam Retrofits	Drop Structure (Weir 2)	Grade Control Structure Cost (Single Structure)	Construct Driving Guide & Use As Wales		83	4,029	2,266
9	490	GROUP 9	MPBC Initial Alternative 3 FSD Mendota Dam Retrofits	Drop Structure (Weir 2)	Grade Control Structure Cost (Single Structure)	Sheet Pile Installation (Single Sheet 20'x420')		103	38,638	21,728
9	491	GROUP 9	MPBC Initial Alternative 3 FSD Mendota Dam Retrofits	Drop Structure (Weir 2)	Grade Control Structure Cost (Single Structure)	Caps For Tops (20' Lengths Material & Labor)		83	4,029	2,266
9	492	GROUP 9	MPBC Initial Alternative 3 FSD Mendota Dam Retrofits	Drop Structure (Weir 2)	Grade Control Structure Cost (Single Structure)	Anchor Support System (Pilings, Cable, Wales, Etc)		83	4,029	2,266
9	493	GROUP 9	MPBC Initial Alternative 3 FSD Mendota Dam Retrofits	Drop Structure (Weir 2)	Grade Control Structure Cost (Single Structure)	Dust Control		79	2,376	1,336

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
9	494	GROUP 9	MPBC Initial Alternative 3 FSD Mendota Dam Retrofits	Bank Revetment						
9	495	GROUP 9	MPBC Initial Alternative 3 FSD Mendota Dam Retrofits	Bank Revetment	Riprap - Labor			83	4,029	2,266
9	497	GROUP 9	MPBC Initial Alternative 3 FSD Mendota Dam Retrofits	Temporary Bypass Channel						
9	498	GROUP 9	MPBC Initial Alternative 3 FSD Mendota Dam Retrofits	Temporary Bypass Channel	Coffer Dam			103	38,638	21,728
9	499	GROUP 9	MPBC Initial Alternative 3 FSD Mendota Dam Retrofits	Temporary Bypass Channel	Dewatering (Upstream & Downstream)			83	4,029	2,266
9	500	GROUP 9	MPBC Initial Alternative 3 FSD Mendota Dam Retrofits	Temporary Bypass Channel	Channel Excavation (Bypass)			88	6,698	3,766
9	501	GROUP 9	MPBC Initial Alternative 3 FSD Mendota Dam Retrofits	Other Costs						
9	502	GROUP 9	MPBC Initial Alternative 3 FSD Mendota Dam Retrofits	Other Costs	Mobilization			80	2,963	1,666
9	63	GROUP 10	Relocation/Modifications							
9	64	GROUP 10	Relocation/Modifications	Canal						
9	65	GROUP 10	Relocation/Modifications	Canal	Canal Relocations			88	6,698	3,766
9	66	GROUP 10	Relocation/Modifications	Canal	Mobilization			80	2,963	1,666
9	67	GROUP 10	Relocation/Modifications	Utilities						
9	68	GROUP 10	Relocation/Modifications	Utilities	Overhead Electrical Distribution Removal & Replacement			83	4,029	2,266
9	69	GROUP 10	Relocation/Modifications	Utilities	Mobilization			80	2,963	1,666
9	70	GROUP 10	Relocation/Modifications	Utilities						

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
9	71	GROUP 10	Relocation/Modifications	Groundwater Well Floodproofing (Quantities Reflect 2 Each Locations)						
9	72	GROUP 10	Relocation/Modifications	Groundwater Well Floodproofing (Quantities Reflect 2 Each Locations)	Site Preparation & Construction					
9	73	GROUP 10	Relocation/Modifications	Groundwater Well Floodproofing (Quantities Reflect 2 Each Locations)	Site Preparation & Construction	Clearing & Grubbing		87	6,126	3,445
9	74	GROUP 10	Relocation/Modifications	Groundwater Well Floodproofing (Quantities Reflect 2 Each Locations)	Site Preparation & Construction	Earthwork (Using Loader & Truck)		88	6,698	3,766
9	75	GROUP 10	Relocation/Modifications	Groundwater Well Floodproofing (Quantities Reflect 2 Each Locations)	Site Preparation & Construction	Revegetation		88	6,698	3,766
9	76	GROUP 10	Relocation/Modifications	Groundwater Well Floodproofing (Quantities Reflect 2 Each Locations)	Site Preparation & Construction	Pull Pump & Column & Reinstall After Modifications		83	4,029	2,266
9	77	GROUP 10	Relocation/Modifications	Groundwater Well Floodproofing (Quantities Reflect 2 Each Locations)	Site Preparation & Construction	Column Extension		83	4,029	2,266
9	78	GROUP 10	Relocation/Modifications	Groundwater Well Floodproofing (Quantities Reflect 2 Each Locations)	Site Preparation & Construction	Casing Extension		83	4,029	2,266
9	79	GROUP 10	Relocation/Modifications	Groundwater Well Floodproofing (Quantities Reflect 2 Each Locations)	Site Preparation & Construction	Discharge Piping Modifications		83	4,029	2,266
9	80	GROUP 10	Relocation/Modifications	Groundwater Well Floodproofing (Quantities Reflect 2 Each Locations)	Site Preparation & Construction	Replace Electrical Panel		81	3,070	1,727
9	81	GROUP 10	Relocation/Modifications	Groundwater Well Floodproofing (Quantities Reflect 2 Each Locations)	Site Preparation & Construction	PG&E Electrical Service		81	3,070	1,727
9	82	GROUP 10	Relocation/Modifications	Groundwater Well Floodproofing (Quantities Reflect 2 Each Locations)	Site Preparation & Construction	Dust Control		79	2,376	1,336

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
9	83	GROUP 10	Relocation/Modifications	Groundwater Well Floodproofing (Quantities Reflect 2 Each Locations)	Site Preparation & Construction	Mobilization		80	2,963	1,666
9	307	GROUP 11	Fresno Slough Dam							
9	308	GROUP 11	Fresno Slough Dam	Columbia Canal Siphon FP-1						
9	309	GROUP 11	Fresno Slough Dam	Columbia Canal Siphon FP-1	Mendota Pool Pump Station					
9	310	GROUP 11	Fresno Slough Dam	Columbia Canal Siphon FP-1	Mendota Pool Pump Station	Clearing & Grubbing		87	6,126	3,445
9	311	GROUP 11	Fresno Slough Dam	Columbia Canal Siphon FP-1	Mendota Pool Pump Station	Site Excavation		88	6,698	3,766
9	312	GROUP 11	Fresno Slough Dam	Columbia Canal Siphon FP-1	Mendota Pool Pump Station	Excavate Ditch To Connect Pump Inlet To River Thalweg		88	6,698	3,766
9	313	GROUP 11	Fresno Slough Dam	Columbia Canal Siphon FP-1	Mendota Pool Pump Station	Structure Backfill		88	6,698	3,766
9	314	GROUP 11	Fresno Slough Dam	Columbia Canal Siphon FP-1	Mendota Pool Pump Station	Structure Concrete		83	4,029	2,266
9	315	GROUP 11	Fresno Slough Dam	Columbia Canal Siphon FP-1	Mendota Pool Pump Station	Pumps & Motors (50HP)		83	4,029	2,266
9	316	GROUP 11	Fresno Slough Dam	Columbia Canal Siphon FP-1	Mendota Pool Pump Station	36" Pump Discharge Assemblies		80	2,963	1,666
9	317	GROUP 11	Fresno Slough Dam	Columbia Canal Siphon FP-1	Mendota Pool Pump Station	Trashracks		83	4,029	2,266
9	318	GROUP 11	Fresno Slough Dam	Columbia Canal Siphon FP-1	Mendota Pool Pump Station	Miscellaneous Metals		83	4,029	2,266
9	319	GROUP 11	Fresno Slough Dam	Columbia Canal Siphon FP-1	Mendota Pool Pump Station	Flow Meter In Each Discharge Pipe		81	3,070	1,727
9	320	GROUP 11	Fresno Slough Dam	Columbia Canal Siphon FP-1	Mendota Pool Pump Station	Coffer Dam		103	38,638	21,728
9	321	GROUP 11	Fresno Slough Dam	Columbia Canal Siphon FP-1	Mendota Pool Pump Station	Dewatering Within Coffer Dam		83	4,029	2,266
9	322	GROUP 11	Fresno Slough Dam	Columbia Canal Siphon FP-1	Mendota Pool Pump Station	Dust Control		79	2,376	1,336
9	323	GROUP 11	Fresno Slough Dam	Columbia Canal Siphon FP-1	Mendota Pool Pump Station	SWPPP		75	1,581	889
9	324	GROUP 11	Fresno Slough Dam	Columbia Canal Siphon FP-1	Mendota Pool Pump Station	Worker Protection		82	3,529	1,984
9	325	GROUP 11	Fresno Slough Dam	Columbia Canal Siphon FP-1	Earthen Canal (Columbia Canal Feeder)					
9	326	GROUP 11	Fresno Slough Dam	Columbia Canal Siphon FP-1	Earthen Canal (Columbia Canal Feeder)	Clearing & Grubbing		87	6,126	3,445
9	327	GROUP 11	Fresno Slough Dam	Columbia Canal Siphon FP-1	Earthen Canal (Columbia Canal Feeder)	Site Excavation		88	6,698	3,766

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
9	328	GROUP 11	Fresno Slough Dam	Columbia Canal Siphon FP-1	Earthen Canal (Columbia Canal Feeder)	Loader/Excavator & Truck For Material (Compact Volume +20%)		88	6,698	3,766
9	329	GROUP 11	Fresno Slough Dam	Columbia Canal Siphon FP-1	Earthen Canal (Columbia Canal Feeder)	Haul Truck (<20 Miles Transport (Compacted Volume +20%)		88	6,698	3,766
9	330	GROUP 11	Fresno Slough Dam	Columbia Canal Siphon FP-1	Earthen Canal (Columbia Canal Feeder)	Earthwork Fill (Compacted)		88	6,698	3,766
9	331	GROUP 11	Fresno Slough Dam	Columbia Canal Siphon FP-1	Earthen Canal (Columbia Canal Feeder)	Structure Concrete (Headwall)		83	4,029	2,266
9	332	GROUP 11	Fresno Slough Dam	Columbia Canal Siphon FP-1	Earthen Canal (Columbia Canal Feeder)	Transition Structure Concrete		83	4,029	2,266
9	333	GROUP 11	Fresno Slough Dam	Columbia Canal Siphon FP-1	Earthen Canal (Columbia Canal Feeder)	Purchasing & Hauling Gravel For Roadway, 100 LB/CF		86	5,617	3,159
9	334	GROUP 11	Fresno Slough Dam	Columbia Canal Siphon FP-1	Earthen Canal (Columbia Canal Feeder)	Gravel Placement For Road At 6" Thick		88	6,698	3,766
9	335	GROUP 11	Fresno Slough Dam	Columbia Canal Siphon FP-1	Earthen Canal (Columbia Canal Feeder)	Dust Control		79	2,376	1,336
9	336	GROUP 11	Fresno Slough Dam	Columbia Canal Siphon FP-1	Earthen Canal (Columbia Canal Feeder)	SWPPP		75	1,581	889
9	337	GROUP 11	Fresno Slough Dam	Columbia Canal Siphon FP-1	Earthen Canal (Columbia Canal Feeder)	Worker Protection		82	3,529	1,984
9	338	GROUP 11	Fresno Slough Dam	Columbia Canal Siphon FP-1	Columbia Canal Siphon					
9	339	GROUP 11	Fresno Slough Dam	Columbia Canal Siphon FP-1	Columbia Canal Siphon	Clearing & Grubbing		87	6,126	3,445
9	340	GROUP 11	Fresno Slough Dam	Columbia Canal Siphon FP-1	Columbia Canal Siphon	Excavate & Fill Bore Pit (30' x 30' x 22' Deep)		83	4,029	2,266
9	341	GROUP 11	Fresno Slough Dam	Columbia Canal Siphon FP-1	Columbia Canal Siphon	Bore & Jack 114" Steel Carrier Pipe		86	5,460	3,070
9	342	GROUP 11	Fresno Slough Dam	Columbia Canal Siphon FP-1	Columbia Canal Siphon	Reinforced Concrete Pipe (RCP, Pipe, 84", D-25)		83	4,029	2,266
9	343	GROUP 11	Fresno Slough Dam	Columbia Canal Siphon FP-1	Columbia Canal Siphon	Reinforced Concrete Pipe (RCP, Bends, 84", D-25)		83	4,029	2,266
9	344	GROUP 11	Fresno Slough Dam	Columbia Canal Siphon FP-1	Columbia Canal Siphon	Pressure Grout Annular Space		82	3,619	2,035
9	345	GROUP 11	Fresno Slough Dam	Columbia Canal Siphon FP-1	Columbia Canal Siphon	Excavate & Fill Receiving Pit (30' x 30' x 22' Deep)		83	4,029	2,266
9	346	GROUP 11	Fresno Slough Dam	Columbia Canal Siphon FP-1	Columbia Canal Siphon	Structure Excavation (Inlet Structure)		88	6,698	3,766

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
9	347	GROUP 11	Fresno Slough Dam	Columbia Canal Siphon FP-1	Columbia Canal Siphon	Structure Backfill		88	6,698	3,766
9	348	GROUP 11	Fresno Slough Dam	Columbia Canal Siphon FP-1	Columbia Canal Siphon	Structure Concrete (Inlet Structure)		83	4,029	2,266
9	349	GROUP 11	Fresno Slough Dam	Columbia Canal Siphon FP-1	Columbia Canal Siphon	Dust Control		79	2,376	1,336
9	350	GROUP 11	Fresno Slough Dam	Columbia Canal Siphon FP-1	Columbia Canal Siphon	SWPPP		75	1,581	889
9	351	GROUP 11	Fresno Slough Dam	Columbia Canal Siphon FP-1	Columbia Canal Siphon	Worker Protection		82	3,529	1,984
9	352	GROUP 11	Fresno Slough Dam	Columbia Canal Siphon FP-1	Columbia Canal Pump Station					
9	353	GROUP 11	Fresno Slough Dam	Columbia Canal Siphon FP-1	Columbia Canal Pump Station	Clearing & Grubbing		87	6,126	3,445
9	354	GROUP 11	Fresno Slough Dam	Columbia Canal Siphon FP-1	Columbia Canal Pump Station	Structure Excavation		88	6,698	3,766
9	355	GROUP 11	Fresno Slough Dam	Columbia Canal Siphon FP-1	Columbia Canal Pump Station	Structure Backfill		88	6,698	3,766
9	356	GROUP 11	Fresno Slough Dam	Columbia Canal Siphon FP-1	Columbia Canal Pump Station	Structure Concrete		83	4,029	2,266
9	357	GROUP 11	Fresno Slough Dam	Columbia Canal Siphon FP-1	Columbia Canal Pump Station	Pumps & Motors (75HP)		83	4,029	2,266
9	358	GROUP 11	Fresno Slough Dam	Columbia Canal Siphon FP-1	Columbia Canal Pump Station	54" Pump Discharge Assemblies		80	2,963	1,666
9	359	GROUP 11	Fresno Slough Dam	Columbia Canal Siphon FP-1	Columbia Canal Pump Station	72" Steel Pipe		84	4,462	2,509
9	360	GROUP 11	Fresno Slough Dam	Columbia Canal Siphon FP-1	Columbia Canal Pump Station	Trashrack		83	4,029	2,266
9	361	GROUP 11	Fresno Slough Dam	Columbia Canal Siphon FP-1	Columbia Canal Pump Station	Miscellaneous Metals		83	4,029	2,266
9	362	GROUP 11	Fresno Slough Dam	Columbia Canal Siphon FP-1	Columbia Canal Pump Station	Coffer Dam		103	38,638	21,728
9	363	GROUP 11	Fresno Slough Dam	Columbia Canal Siphon FP-1	Columbia Canal Pump Station	Dewatering Within Coffer Dam		83	4,029	2,266
9	364	GROUP 11	Fresno Slough Dam	Columbia Canal Siphon FP-1	Columbia Canal Pump Station	Dust Control		79	2,376	1,336
9	365	GROUP 11	Fresno Slough Dam	Columbia Canal Siphon FP-1	Columbia Canal Pump Station	SWPPP		75	1,581	889
9	366	GROUP 11	Fresno Slough Dam	Columbia Canal Siphon FP-1	Columbia Canal Pump Station	Worker Protection		82	3,529	1,984
9	367	GROUP 11	Fresno Slough Dam	Columbia Canal Siphon FP-1	Raising Columbia Canal					
9	368	GROUP 11	Fresno Slough Dam	Columbia Canal Siphon FP-1	Raising Columbia Canal	Clearing & Grubbing		87	6,126	3,445
9	369	GROUP 11	Fresno Slough Dam	Columbia Canal Siphon FP-1	Raising Columbia Canal	Structure Concrete (West Check Structure & Headwall)		83	4,029	2,266
9	370	GROUP 11	Fresno Slough Dam	Columbia Canal Siphon FP-1	Raising Columbia Canal	Riprap, Facing Class Purchase, 100 LB/CF, 2' Deep		83	4,029	2,266

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
9	371	GROUP 11	Fresno Slough Dam	Columbia Canal Siphon FP-1	Raising Columbia Canal	Remove Old Pump Structure & Flume		83	4,029	2,266
9	372	GROUP 11	Fresno Slough Dam	Columbia Canal Siphon FP-1	Raising Columbia Canal	Onsite Excavation		88	6,698	3,766
9	373	GROUP 11	Fresno Slough Dam	Columbia Canal Siphon FP-1	Raising Columbia Canal	Loader/Excavator & Truck For Material (Compact Volume +20%)		88	6,698	3,766
9	374	GROUP 11	Fresno Slough Dam	Columbia Canal Siphon FP-1	Raising Columbia Canal	Haul Truck (<20 Miles Transport (Compacted Volume +20%)		88	6,698	3,766
9	375	GROUP 11	Fresno Slough Dam	Columbia Canal Siphon FP-1	Raising Columbia Canal	Raising Canal 5' - 2,700', 1.5 Side Slopes, 4' Bottom, 12' Roadways		88	6,698	3,766
9	376	GROUP 11	Fresno Slough Dam	Columbia Canal Siphon FP-1	Raising Columbia Canal	Canal Lining At 6" Thick		83	4,029	2,266
9	377	GROUP 11	Fresno Slough Dam	Columbia Canal Siphon FP-1	Raising Columbia Canal	Purchasing & Hauling Gravel For Roadway, 100 LB/CF		86	5,617	3,159
9	378	GROUP 11	Fresno Slough Dam	Columbia Canal Siphon FP-1	Raising Columbia Canal	Gravel Placement For Road At 6" Thick, 2,700' On Both Banks		88	6,698	3,766
9	379	GROUP 11	Fresno Slough Dam	Columbia Canal Siphon FP-1	Raising Columbia Canal	Structure Concrete (East Check Structure)		83	4,029	2,266
9	380	GROUP 11	Fresno Slough Dam	Columbia Canal Siphon FP-1	Raising Columbia Canal	Dust Control		79	2,376	1,336
9	381	GROUP 11	Fresno Slough Dam	Columbia Canal Siphon FP-1	Raising Columbia Canal	SWPPP		75	1,581	889
9	382	GROUP 11	Fresno Slough Dam	Columbia Canal Siphon FP-1	Raising Columbia Canal	Worker Protection		82	3,529	1,984
9	383	GROUP 11	Fresno Slough Dam	Columbia Canal Siphon FP-1	Raising Columbia Canal	Mobilization		80	2,963	1,666
9	384	GROUP 12	Fresno Slough Dam							
9	385	GROUP 12	Fresno Slough Dam	Main Canal & Helm Ditch Relocations						
9	386	GROUP 12	Fresno Slough Dam	Main Canal & Helm Ditch Relocations	Main Canal Realignment					
9	387	GROUP 12	Fresno Slough Dam	Main Canal & Helm Ditch Relocations	Main Canal Realignment	Clearing & Grubbing		87	6,126	3,445
9	388	GROUP 12	Fresno Slough Dam	Main Canal & Helm Ditch Relocations	Main Canal Realignment	Demolish Existing Headworks		87	6,126	3,445
9	389	GROUP 12	Fresno Slough Dam	Main Canal & Helm Ditch Relocations	Main Canal Realignment	Onsite Excavation		88	6,698	3,766
9	390	GROUP 12	Fresno Slough Dam	Main Canal & Helm Ditch Relocations	Main Canal Realignment	Earthwork Fill (Compacted)		88	6,698	3,766
9	391	GROUP 12	Fresno Slough Dam	Main Canal & Helm Ditch Relocations	Main Canal Realignment	Concrete Canal Lining (6" Thickness)		83	4,029	2,266
9	392	GROUP 12	Fresno Slough Dam	Main Canal & Helm Ditch Relocations	Main Canal Realignment	Buy & Haul Gravel For Roadway, 100 LB/CF		88	6,698	3,766

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
9	393	GROUP 12	Fresno Slough Dam	Main Canal & Helm Ditch Relocations	Main Canal Realignment	Gravel Placement For Road At 6" Thick		88	6,698	3,766
9	394	GROUP 12	Fresno Slough Dam	Main Canal & Helm Ditch Relocations	Main Canal Realignment	Riprap, Facing Class Purchase, 100 LB/CF, 2' Deep		83	4,029	2,266
9	395	GROUP 12	Fresno Slough Dam	Main Canal & Helm Ditch Relocations	Main Canal Realignment	Place Riprap		83	4,029	2,266
9	396	GROUP 12	Fresno Slough Dam	Main Canal & Helm Ditch Relocations	Main Canal Realignment	Dust Control		79	2,376	1,336
9	397	GROUP 12	Fresno Slough Dam	Main Canal & Helm Ditch Relocations	Main Canal Realignment	SWPPP		75	1,581	889
9	398	GROUP 12	Fresno Slough Dam	Main Canal & Helm Ditch Relocations	Main Canal Realignment	Worker Protection		82	3,529	1,984
9	399	GROUP 12	Fresno Slough Dam	Main Canal & Helm Ditch Relocations	Helm's Ditch Realignment					
9	400	GROUP 12	Fresno Slough Dam	Main Canal & Helm Ditch Relocations	Helm's Ditch Realignment	Clearing & Grubbing		87	6,126	3,445
9	401	GROUP 12	Fresno Slough Dam	Main Canal & Helm Ditch Relocations	Helm's Ditch Realignment	Demolish Existing Headworks		87	6,126	3,445
9	402	GROUP 12	Fresno Slough Dam	Main Canal & Helm Ditch Relocations	Helm's Ditch Realignment	Onsite Excavation		88	6,698	3,766
9	403	GROUP 12	Fresno Slough Dam	Main Canal & Helm Ditch Relocations	Helm's Ditch Realignment	Loader/Excavator & Truck For Material (Compacted Vol + 20%)		88	6,698	3,766
9	404	GROUP 12	Fresno Slough Dam	Main Canal & Helm Ditch Relocations	Helm's Ditch Realignment	Haul Truck (<20 Miles Transport, Compacted Vol + 20%)		88	6,698	3,766
9	405	GROUP 12	Fresno Slough Dam	Main Canal & Helm Ditch Relocations	Helm's Ditch Realignment	Earthwork Fill (Compacted)		88	6,698	3,766
9	406	GROUP 12	Fresno Slough Dam	Main Canal & Helm Ditch Relocations	Helm's Ditch Realignment	Concrete Canal Lining (6" Thickness)		83	4,029	2,266
9	407	GROUP 12	Fresno Slough Dam	Main Canal & Helm Ditch Relocations	Helm's Ditch Realignment	Buy & Haul Gravel For Roadway, 100 LB/CF		88	6,698	3,766
9	408	GROUP 12	Fresno Slough Dam	Main Canal & Helm Ditch Relocations	Helm's Ditch Realignment	Gravel Placement For Road At 6" Thick		88	6,698	3,766
9	409	GROUP 12	Fresno Slough Dam	Main Canal & Helm Ditch Relocations	Helm's Ditch Realignment	Riprap, Facing Class Purchase, 100 LB/CF, 2' Deep		83	4,029	2,266
9	410	GROUP 12	Fresno Slough Dam	Main Canal & Helm Ditch Relocations	Helm's Ditch Realignment	Place Riprap		83	4,029	2,266
9	411	GROUP 12	Fresno Slough Dam	Main Canal & Helm Ditch Relocations	Helm's Ditch Realignment	Dust Control		79	2,376	1,336
9	412	GROUP 12	Fresno Slough Dam	Main Canal & Helm Ditch Relocations	Helm's Ditch Realignment	SWPPP		75	1,581	889
9	413	GROUP 12	Fresno Slough Dam	Main Canal & Helm Ditch Relocations	Helm's Ditch Realignment	Worker Protection		82	3,529	1,984
9	414	GROUP 12	Fresno Slough Dam	Main Canal & Helm Ditch Relocations	Control Structure					
9	415	GROUP 12	Fresno Slough Dam	Main Canal & Helm Ditch Relocations	Control Structure	Drive & Remove 1 Row Temp Sheet Piling To Isolate Inlet		103	38,638	21,728

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
9	416	GROUP 12	Fresno Slough Dam	Main Canal & Helm Ditch Relocations	Control Structure	Dewater Behind Sheet Piling		83	4,029	2,266
9	417	GROUP 12	Fresno Slough Dam	Main Canal & Helm Ditch Relocations	Control Structure	Furnish & Install 1 Row Permanent Sheet Piling For Cut-Off Wall		103	38,638	21,728
9	418	GROUP 12	Fresno Slough Dam	Main Canal & Helm Ditch Relocations	Control Structure	Structure Concrete		83	4,029	2,266
9	419	GROUP 12	Fresno Slough Dam	Main Canal & Helm Ditch Relocations	Control Structure	Furnish & Install 15' Wide x 15' Tall Radial Gates		83	4,029	2,266
9	420	GROUP 12	Fresno Slough Dam	Main Canal & Helm Ditch Relocations	Control Structure	Furnish & Install 3 Wire Rope Hoists For Radial Gates		83	4,029	2,266
9	421	GROUP 12	Fresno Slough Dam	Main Canal & Helm Ditch Relocations	Control Structure	48" Concrete Pipeline		83	4,029	2,266
9	422	GROUP 12	Fresno Slough Dam	Main Canal & Helm Ditch Relocations	Control Structure	Concrete Junction Box With Slide Gate		80	2,963	1,666
9	423	GROUP 12	Fresno Slough Dam	Main Canal & Helm Ditch Relocations	Control Structure	Excavation For North Headworks Structure		88	6,698	3,766
9	424	GROUP 12	Fresno Slough Dam	Main Canal & Helm Ditch Relocations	Control Structure	Backfill Around North Headworks Structure		88	6,698	3,766
9	425	GROUP 12	Fresno Slough Dam	Main Canal & Helm Ditch Relocations	Control Structure	Onsite Electrical/Telemetry		81	3,070	1,727
9	426	GROUP 12	Fresno Slough Dam	Main Canal & Helm Ditch Relocations	Control Structure	Miscellaneous Metals		83	4,029	2,266
9	427	GROUP 12	Fresno Slough Dam	Main Canal & Helm Ditch Relocations	Control Structure	Dust Control		79	2,376	1,336
9	428	GROUP 12	Fresno Slough Dam	Main Canal & Helm Ditch Relocations	Control Structure	SWPPP		75	1,581	889
9	429	GROUP 12	Fresno Slough Dam	Main Canal & Helm Ditch Relocations	Control Structure	Worker Protection		82	3,529	1,984
9	430	GROUP 12	Fresno Slough Dam	Main Canal & Helm Ditch Relocations	Bridge Over Realigned Main Canal					
9	431	GROUP 12	Fresno Slough Dam	Main Canal & Helm Ditch Relocations	Bridge Over Realigned Main Canal	120' x 30' Bridge Structure (Pilings, Abutments, Excavation, Backfill, Stem,		83	4,029	2,266
9	433	GROUP 12	Fresno Slough Dam	Main Canal & Helm Ditch Relocations	Bridge Over Realigned Main Canal	Modify Mendota Potable Water Pipeline To Cross Bridge		83	4,029	2,266
9	434	GROUP 12	Fresno Slough Dam	Main Canal & Helm Ditch Relocations	Bridge Over Realigned Main Canal	Dust Control		79	2,376	1,336
9	435	GROUP 12	Fresno Slough Dam	Main Canal & Helm Ditch Relocations	Bridge Over Realigned Main Canal	SWPPP		75	1,581	889
9	436	GROUP 12	Fresno Slough Dam	Main Canal & Helm Ditch Relocations	Bridge Over Realigned Main Canal	Worker Protection		82	3,529	1,984
9	437	GROUP 12	Fresno Slough Dam	Main Canal & Helm Ditch Relocations	Bridge Over Realigned Main Canal	Mobilization		80	2,963	1,666
9	438	GROUP 13	Relocations SJR Bypass Canal South Option							

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
9	439	GROUP 13	Relocations SJR Bypass Canal South Option	Canal						
9	440	GROUP 13	Relocations SJR Bypass Canal South Option	Canal	Canal Relocations			88	6,698	3,766
9	441	GROUP 13	Relocations SJR Bypass Canal South Option	Canal	Mobilization			80	2,963	1,666
9	442	GROUP 13	Relocations SJR Bypass Canal South Option	Utilities						
9	443	GROUP 13	Relocations SJR Bypass Canal South Option	Utilities	Overhead Electrical Distribution Removal & Replacement			83	4,029	2,266
9	444	GROUP 13	Relocations SJR Bypass Canal South Option	Utilities	Mobilization			80	2,963	1,666
9	445	GROUP 13	Relocations SJR Bypass Canal South Option	Pump Station						
9	446	GROUP 13	Relocations SJR Bypass Canal South Option	Pump Station	General Pump Station Site Preparation & Construction (2 Each Locations)					
9	447	GROUP 13	Relocations SJR Bypass Canal South Option	Pump Station	General Pump Station Site Preparation & Construction (2 Each Locations)	Clearing & Grubbing		87	6,126	3,445
9	448	GROUP 13	Relocations SJR Bypass Canal South Option	Pump Station	General Pump Station Site Preparation & Construction (2 Each Locations)	Canal/Drain Relocation		88	6,698	3,766
9	449	GROUP 13	Relocations SJR Bypass Canal South Option	Pump Station	General Pump Station Site Preparation & Construction (2 Each Locations)	Concrete Lining (Intake & Outfall)		83	4,029	2,266
9	450	GROUP 13	Relocations SJR Bypass Canal South Option	Pump Station	General Pump Station Site Preparation & Construction (2 Each Locations)	Rock Riprap At Outfall		83	4,029	2,266
9	451	GROUP 13	Relocations SJR Bypass Canal South Option	Pump Station	General Pump Station Site Preparation & Construction (2 Each Locations)	Pump & Sump Relocation		83	4,029	2,266
9	452	GROUP 13	Relocations SJR Bypass Canal South Option	Pump Station	General Pump Station Site Preparation & Construction (2 Each Locations)	Replace Electrical Panel		81	3,070	1,727

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
9	453	GROUP 13	Relocations SJR Bypass Canal South Option	Pump Station	General Pump Station Site Preparation & Construction (2 Each Locations)	PG&E Electrical Service		81	3,070	1,727
9	454	GROUP 13	Relocations SJR Bypass Canal South Option	Pump Station	General Pump Station Site Preparation & Construction (2 Each Locations)	12" Steel Pipe		83	4,029	2,266
9	455	GROUP 13	Relocations SJR Bypass Canal South Option	Pump Station	General Pump Station Site Preparation & Construction (2 Each Locations)	Dust Control		79	2,376	1,336
9	456	GROUP 13	Relocations SJR Bypass Canal South Option	Pump Station	General Pump Station Site Preparation & Construction (2 Each Locations)	Worker Protection		82	3,529	1,984
9	457	GROUP 13	Relocations SJR Bypass Canal South Option	Pump Station	General Pump Station Site Preparation & Construction (2 Each Locations)	Mobilization		80	2,963	1,666
9	458	GROUP 13	Relocations SJR Bypass Canal South Option	Deep Well Floodproofing						
9	459	GROUP 13	Relocations SJR Bypass Canal South Option	Deep Well Floodproofing	Site Preparation & Construction (2 Each Locations)					
9	460	GROUP 13	Relocations SJR Bypass Canal South Option	Deep Well Floodproofing	Site Preparation & Construction (2 Each Locations)	Clearing & Grubbing		87	6,126	3,445
9	461	GROUP 13	Relocations SJR Bypass Canal South Option	Deep Well Floodproofing	Site Preparation & Construction (2 Each Locations)	Earthwork (Loader & Truck)		88	6,698	3,766
9	462	GROUP 13	Relocations SJR Bypass Canal South Option	Deep Well Floodproofing	Site Preparation & Construction (2 Each Locations)	Revegetation		88	6,698	3,766
9	463	GROUP 13	Relocations SJR Bypass Canal South Option	Deep Well Floodproofing	Site Preparation & Construction (2 Each Locations)	Pull Pump & Column and Reinstall After Modifications		83	4,029	2,266
9	464	GROUP 13	Relocations SJR Bypass Canal South Option	Deep Well Floodproofing	Site Preparation & Construction (2 Each Locations)	Column Extension		83	4,029	2,266
9	465	GROUP 13	Relocations SJR Bypass Canal South Option	Deep Well Floodproofing	Site Preparation & Construction (2 Each Locations)	Casing Extension		83	4,029	2,266
9	466	GROUP 13	Relocations SJR Bypass Canal South Option	Deep Well Floodproofing	Site Preparation & Construction (2 Each Locations)	Discharge Pipe Modifications		83	4,029	2,266
9	467	GROUP 13	Relocations SJR Bypass Canal South Option	Deep Well Floodproofing	Site Preparation & Construction (2 Each Locations)	Replace Electrical Panel		81	3,070	1,727

Schedule Name	Item	Group	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Total Adjusted SPL (dBA) @ 50 feet	Distance to 45 dBA SPL Contour (feet)	Distance to 50 dBA SPL Contour (feet)
9	468	GROUP 13	Relocations SJR Bypass Canal South Option	Deep Well Floodproofing	Site Preparation & Construction (2 Each Locations)	PG&E Electrical Service		81	3,070	1,727
9	469	GROUP 13	Relocations SJR Bypass Canal South Option	Deep Well Floodproofing	Site Preparation & Construction (2 Each Locations)	Dust Control		79	2,376	1,336
9	470	GROUP 13	Relocations SJR Bypass Canal South Option	Deep Well Floodproofing	Site Preparation & Construction (2 Each Locations)	Mobilization		80	2,963	1,666
9	38	GROUP 14	Vegetation & Irrigation							
9	39	GROUP 14	Vegetation & Irrigation	General Description						
9	40	GROUP 14	Vegetation & Irrigation	General Description	Plant Establishment (12 Months)			81	3,070	1,727
9	41	GROUP 14	Vegetation & Irrigation	General Description	Landscape Maintenance (12 Months Or As Needed)			81	3,070	1,727
9	42	GROUP 14	Vegetation & Irrigation	General Description	Agricultural Topsoil (6" Layer)			88	6,698	3,766
9	43	GROUP 14	Vegetation & Irrigation	General Description	Erosion Control Fabric			80	2,963	1,666
9	44	GROUP 14	Vegetation & Irrigation	General Description	Irrigation System			81	3,070	1,727
9	45	GROUP 14	Vegetation & Irrigation	General Description	Beaver Fence			80	2,963	1,666
9	46	GROUP 14	Vegetation & Irrigation	General Description	Seeding			88	6,698	3,766
9	47	GROUP 14	Vegetation & Irrigation	General Description	Pole Cuttings			80	2,963	1,666
9	48	GROUP 14	Vegetation & Irrigation	General Description	Fascine Bundle			80	2,963	1,666
9	49	GROUP 14	Vegetation & Irrigation	General Description	Instream Woody Material			80	2,963	1,666
9	54	GROUP 14	Vegetation & Irrigation	General Description	Treepot Installation DP - Cmb			81	3,070	1,727
9	55	GROUP 14	Vegetation & Irrigation	General Description	Treepot Installation DP - Crg			81	3,070	1,727
9	56	GROUP 14	Vegetation & Irrigation	General Description	Treepot Installation DP - Rbh			81	3,070	1,727
9	57	GROUP 14	Vegetation & Irrigation	General Description	Treepot Installation DP - Sgf			81	3,070	1,727
9	60	GROUP 14	Vegetation & Irrigation	General Description	Treepot Installation D6 - Swt			81	3,070	1,727
9	61	GROUP 14	Vegetation & Irrigation	General Description	Treepot Installation D6 - Bwt			81	3,070	1,727
9	62	GROUP 14	Vegetation & Irrigation	General Description	Mobilization			80	2,963	1,666

Mendota Pool Bypass and Reach 2B Improvements Project

Final
Environmental Impact Statement/Report

Appendix 19-A Draft Phase I Environmental Site Assessment

SAN JOAQUIN RIVER
RESTORATION PROGRAM

Final
July 2016

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DRAFT PHASE I ESA REPORT

SAN JOAQUIN RIVER RESTORATION PROJECT REACH 2B IMPROVEMENTS PROJECT MENDOTA, CA 93640

Prepared for

San Joaquin River Restoration Program

December 14, 2011

URS Corporation
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18600200

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Attachments

A Regulatory Records Documentation

B Historical Documentation

C Well Search Report

URS Corporation (URS) was retained by the U.S. Department of the Interior, Bureau of Reclamation, San Joaquin River Restoration Program to conduct a Phase I Environmental Site Assessment (ESA) of the Mendota Pool Bypass and Reach 2B Improvements Project located in the area of the Chowchilla Bifurcation Structures and downstream to Mendota Dam in Mendota, Fresno and Madera Counties, California (Project area). The purpose of this Phase I ESA is to evaluate whether current or historical activities on or near the subject property may have resulted in significant impacts from hazardous substances or petroleum products, also known as recognized environmental conditions (RECs). The Phase 1 ESA results will be used in the development of the hazardous materials section in the San Joaquin River Restoration Reach 2B Improvements Project Environmental Impact Report (EIR).

The subject property is approximately 11,000 acres in size and consists of land used for agricultural purposes, including row crops, orchards and vineyards. The Mendota Dam dams the San Joaquin River and creates the Mendota Pool, which is used to support the surrounding agricultural land uses. The Chowchilla Bifurcation Structures are used for flood control purposes by the California Department of Water Resources. The normal San Joaquin river flow is released into the San Joaquin river channel. Under flood conditions, the bifurcation dam is opened to spilt the flow between the San Joaquin River channel and the normally dry Chowchilla by-pass channel. Two to three farmhouses with assorted farm buildings were noted on the southeast portion of the project site during the site reconnaissance. Surrounding land use is predominantly commercial and residential.

Topographic coverage of the area is provided by the USGS 7.5-minute series topographic quadrangle map of Mendota Dam, dated 1984, and the USGS 15-minute series topographic quadrangle map of Firebaugh, dated 1962. According to URS' review of the USGS topographic map, the surface elevation of the Project area ranges from approximately 175 feet above mean sea level (msl) at the Chowchilla Bifurcation Structures, to 155 above msl at the Mendota Dam. Area topography has an overall slope to the west. Local groundwater flow direction beneath the subject property may vary, but is inferred to be predominantly to the west. According to the Environmental Data Resources (EDR) database report, the Project area is located within the 100-year flood zone of the San Joaquin River.

No information regarding title records, environmental liens or activity and use limitations, specialized knowledge, valuation reduction for environmental issues, or other information was provided by San Joaquin River Restoration Program (SJRRP) Team indicative of a potential REC associated with the subject property.

Based on a review of the available historical documentation, the Project area was undeveloped land used for agricultural purposes from at least 1925 until the 1950s. From the late 1950s until the present, the Project area was developed with the Mendota Dam, the Mendota Pool, the Chowchilla Bifurcation Structures, sewage treatment plant, levees, marshlands, and farmland.

The EDR database search of facilities on the federal and state lists was reviewed for information on whether hazardous substances, wastes or petroleum products have been improperly handled, stored, or disposed on the subject property and adjacent properties. The following sites within the Project area, or on the boundary of the specified Project area, were identified in the database report as potential REC sites:

- Paramount Farming Company, 10317 Eastside Drive, Firebaugh, CA

- Mendota Solid Waste Disposal, ½ mile east of Bass Avenue, Mendota, CA
- Frank A Logoluso Farms, 2369 San Mateo Avenue, Mendota, CA
- AES Mendota/Covanta Mendota LP, 400 Guillen Parkway, Mendota, CA

Paramount Farming Company at 10317 Eastside Drive in Firebaugh, CA, is located on the northern boundary of the Project area. The site has been identified as having 2.4 tons of asbestos containing waste, and the disposal method is listed as landfill or surface impoundment that will be closed as a landfill (to include on-site treatment and/or stabilization). The site represents a potential environmental concern to the Project area due to the presence of asbestos containing waste.

The following historic REC (HREC) was identified in connection with the Project area:

- Because the Project area was historically used as farmland, pesticide/herbicide residuals may be present in the soil. However, features were not identified (e.g., impoundments, bulk storage facilities or crop dusting air strips) that suggested the handling or storage of significant quantities of pesticides and/or herbicides in the Project area.

URS has performed the Phase I ESA in conformance with the scope and limitations of American Society for Testing and Materials (ASTM) Standard E 1527-05 of the Project area. Any exceptions to, or deletions from, this practice are described in Section 1.4 of this report. This assessment has revealed one REC, the Paramount Farming Company, and one HREC, pesticide/herbicide residuals, in connection with the Project area.

During this assessment, URS identified no significant data gaps in reasonably ascertainable information reviewed and described in this report regarding the Project area which would be expected to impact our conclusions.

1.1 PURPOSE

URS was retained by the U.S. Bureau of Reclamation (Reclamation) to conduct a Phase I ESA of the Mendota Pool Bypass and Reach 2B Improvements Project located in the area of the Chowchilla Bifurcation Structures and downstream to Mendota Dam in Mendota, Fresno and Madera Counties, California (Project area). The purpose of this Phase I Environmental Site Assessment (ESA) is to provide a professional opinion on the potential for current presence of recognized environmental concern (REC) at the subject property, including potential impacts from known problems in the surrounding area. The term "recognized environmental condition," as defined by ASTM Standard E 1527-05, means:

> The presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures of the property or into the ground, ground water, or surface water of the property. The term includes hazardous substances or petroleum products even under conditions in compliance with laws. The term is not intended to include *de minimis* conditions that generally do not present a material risk of harm to public health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies. Conditions determined to be *de minimis* are not recognized environmental conditions.

A historic REC (HREC) is defined as "an environmental condition which in the past would have been considered a REC but which may or may not be considered a REC currently. If a past release of any hazardous substances or petroleum products has occurred in connection with the property and has been remediated, with such remediation accepted by the responsible regulatory agency (for example, as evidenced by the issuance of a no further action letter or equivalent), this condition shall be considered an HREC."

This Phase I ESA was conducted according to the recommended guidelines established by ASTM Standard E 1527-05, "Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process," and is generally consistent with the standards and practices set forth in Title 40 Code of Federal Regulations (CFR) Part 312 for "All Appropriate Inquiry (AAI)." For the purpose of this report, hazardous substances and petroleum products are jointly referred to as "hazardous materials."

1.2 DETAILED SCOPE-OF-SERVICES

URS performed the following work:

- Conducted a regulatory database search of known underground storage tanks (USTs); landfills; hazardous waste generation or treatment, storage and disposal facilities; and subsurface contamination in the surrounding area up to within one mile of the center of the subject property (or subject property boundaries).
- Reviewed geologic maps from the Environmental Data Resources (EDR) report for information on physical and hydrogeologic settings of the subject property.

- Researched subject property history by (a) reviewing aerial photographs covering the subject property and adjoining property; (b) reviewing topographic maps; and (c) researching the availability of fire insurance maps and city directories of the subject property and vicinity.
- Conducted interviews with the Bureau of Reclamation about the subject property usage and history.
- Conducted a site reconnaissance for obvious evidence of potential contamination such as current hazardous materials storage or use; unusually stained soils, slabs, and pavements; drains, sumps, drums, tanks, and electrical transformers; stressed vegetation; and discarded hazardous materials containers.
- Contacted pertinent local regulatory agencies for information about the subject property usage and history.
- Evaluated the information collected and prepared this report summarizing our findings, opinions, and conclusions.

URS' scope of work did not include sampling or analysis.

1.3 SIGNIFICANT ASSUMPTIONS

No significant assumptions other than those described below in the following section apply to this Phase I ESA.

1.4 LIMITATIONS AND EXCEPTIONS

No apparent conditions were encountered that would limit URS' ability to complete the Scope of Work, with the exception that portions of the subject property were covered with tall grasses limiting observations of portions of the subject property surface.

This Phase I ESA was prepared in accordance with the scope of work described in Section 1.2. The work conducted by URS is limited to the services agreed to with Reclamation and no other services beyond those explicitly stated should be inferred or are implied.

The conclusions presented in this report are professional opinions based solely upon URS' visual observations of the site and immediate site vicinity, and upon URS' interpretations of the readily available historical information, conversations with personnel knowledgeable about the site, and other readily available public information, as referenced in the report. These conclusions are intended exclusively for the purpose stated herein, at the site indicated, and for the project indicated.

This report is intended for the sole use of Reclamation and the San Joaquin River Restoration Program (SJRRP). The SJRRP comprises several Federal and State of California (State) agencies including Reclamation, U.S. Fish and Wildlife Service, National Marine Fisheries Service, California Department of Water Resources, and California Department of Fish and Game. The scope of services performed during this investigation may not be appropriate for other users, and any use or re-use of this document, or the findings and conclusions presented herein is at the sole risk of said user.

This study was not intended to be a definitive investigation of possible contamination at the subject property. The purpose and scope of this investigation was to determine whether there is reason to suspect the possibility of contamination at the site. No exploratory borings, asbestos survey, soil or groundwater sampling, or laboratory analyses were performed at the subject property by URS and, therefore, the conclusions set forth herein are made without the benefit of such investigation.

This report is intended to be used in its entirety. No excerpts may be taken to be representative of the findings of this assessment.

Opinions and recommendations presented in this report apply to site conditions and features as they existed at the time of URS' property visit, and those reasonably foreseeable. They cannot necessarily apply to conditions and features of which URS is unaware and has not had the opportunity to evaluate.

1.5 SPECIAL TERMS AND CONDITIONS

No special terms and conditions apply other than noted below.

URS' objective is to perform our work in a professional manner, exercising the customary thoroughness and competence of environmental and engineering consulting professionals, in accordance with the standard for professional services at the time and location those services are rendered. It is important to recognize that even the most comprehensive scope of services may fail to detect environmental liability on a particular site. Therefore, URS cannot act as insurers and cannot "certify or underwrite" that a site is free of environmental contamination. No expressed or implied representation or warranty is included or intended in our reports except that our work was performed, within the limits prescribed by our client, with the customary thoroughness and competence of our profession.

1.6 USER RELIANCE

This Phase I ESA report has been prepared for use solely by Reclamation and the SJRRP. This report shall not be relied upon by or transferred to any other party, or used for any other purpose, without the express written authorization of URS. This Phase I ESA report is applicable for 180 days.

2.1 LOCATION AND LEGAL DESCRIPTION

The Project area extends along the San Joaquin River from the Chowchilla Bypass Bifurcation Structure to approximately 0.6 miles downstream of the Mendota Dam, in Fresno and Madera Counties, near the town of Mendota, California. The Project area is bounded to the north by Eastside Drive and to the west by Helm Canal Road, and is approximately 1.5 miles north of State Highway 180.

A legal description of the subject property was not provided to URS.

2.2 SUBJECT PROPERTY AND VICINITY GENERAL CHARACTERISTICS

At the upstream end of the Project area, the Chowchilla Bifurcation Structure is used by the California Department of Water Resources to control and route flood releases from Friant Dam and the upstream watershed into Reach 2B and the Chowchilla Bypass, a flood protection project on the San Joaquin River. Under no-flow conditions, pools may be observed at the downstream base of the Chowchilla Bifurcation Structure in both the Chowchilla Bypass and the San Joaquin River. At the downstream end of the Project area, the Mendota Dam dams the San Joaquin River to create the Mendota Pool (Pool). The Pool is shallow, approximately seven miles long, and the elevation is maintained for the purpose of creating hydraulic head for the Fresno Slough, for irrigation purposes. During flood releases, the Mendota Dam's boards are removed, allowing the backwatered Pool to become part of the flowing river.

The Project area includes a dip-crossing at San Mateo Avenue, which consists of a culvert to convey low flows and an earthen embankment supporting the roadbed, which is overtopped during higher flows. Downstream of San Mateo Avenue, the river channel is inundated due to the Pool water surface elevation. Upstream of the crossing at San Mateo Avenue, the channel is only wetted during Interim Flows or flood releases from the Friant Dam. The Pool backwater supports perennial riparian vegetation, whereas upstream of San Mateo Avenue, the channel exhibits a sandy substrate with little vegetation other than riparian scrub communities.

Portions of the existing river corridor in Reach 2B are privately owned. Land use surrounding the Project area is primarily agricultural with the exception of the water management facilities at the Pool. Agricultural uses in the Project area include row crops, orchards and vineyards. Two or three farmhouses with assorted farm buildings were noted on the southeast portion of the Project area during the site reconnaissance. Several water diversions, canals, lift stations, and groundwater wells were noted during the site reconnaissance as being located within the Project area. In addition, electrical and natural gas distribution lines and water pipelines lie within the Project area.

2.3 PHYSICAL SETTING

Topographic coverage of the area is provided by the USGS 7.5-minute series topographic quadrangle map of Mendota Dam, dated 1984, and the USGS 15-minute series topographic quadrangle map of Firebaugh, dated 1962. According to URS' review of the USGS topographic map, the surface elevation of the Project area ranges from approximately 175 feet above mean sea level (msl) at the Chowchilla Bifurcation Structures, to 155 above msl at the Mendota Dam. Area topography has an overall slope to the west. Local groundwater flow direction beneath the

subject property may vary, but is inferred to be predominantly to the west. According to the EDR database report, the Project area is located within a 100-year flood zone.

Shallow groundwater flow direction can be influenced by various parameters, including topography, soil characteristics, and proximity to surface water such as lakes, rivers, streams, and drainage ditches. Based upon a review of the topographic map, groundwater flow direction is likely to the west. However, it should be noted that the relatively flat topography of the subject property and surrounding areas add to the difficulty of establishing likely subsurface conditions, including groundwater flow direction.

2.4 CURRENT SUBJECT PROPERTY USE

As previously noted, the California Department of Water Resources uses the Chowchilla Bifurcation Structure to control and route flood releases from Friant Dam and the upstream watershed into Reach 2B and the Chowchilla Bypass, a flood protection project on the San Joaquin River. At the downstream end of the Project area, the Mendota Dam dams the San Joaquin River to create the Mendota Pool (Pool). During flood releases, the boards are removed at the dam, allowing the backwatered Pool to become part of the flowing river.

Portions of the existing river corridor in Reach 2B are privately owned. Land use surrounding the project area is primarily agriculture with the exception of the water management facilities at the Pool. Agricultural uses in the Project area include row crops, orchards and vineyards.

2.5 DESCRIPTIONS OF STRUCTURES, ROADS AND OTHER IMPROVEMENTS

Two or three farmhouses with assorted farm buildings were noted on the southeast portion of the Project area. Several water diversions, canals, lift stations, and groundwater wells are located within the Project area. In addition, electrical and natural gas distribution lines and water pipelines lie within the Project area.

2.6 CURRENT ADJOINING PROPERTY USES

Land use surrounding the Project area is primarily agriculture with the exception of the water management facilities at the Mendota Pool. Mendota Airport is located within a half mile of the southwestern boundary of the Project area, and the town of Mendota is located about a mile from the Project area.

URS did not identify adjacent properties representing a potential environmental concern during the site reconnaissance or review of the environmental databases (discussed in Section 4.0).

As part of AAI, additional inquiries are required to be conducted by the purchaser of the property. These inquiries include:

- Identification of environmental cleanup liens against the subject property;
- Specialized knowledge or experience regarding the subject property;
- Relationship of the purchase price to the fair market value if the subject property was not contaminated;
- Commonly known or reasonably ascertainable information regarding the subject property; and,
- Degree of obviousness of the presence or likely presence of contamination at the subject property.

The SJRRP Team provided information on the current and historical uses of the subject property. Information provided by the SJRRP Team is included throughout the report.

URS requested information from SJRRP regarding environmental liens or activity and use limitations; specialized knowledge; knowledge of valuation reduction for environmental issues; owner, site manager, and occupant information; reason for conducting the Phase I ESA; and any other information pertinent to the conducting a Phase I ESA (including previous environmental assessments) for the subject property.

3.1 TITLE RECORDS

A title report was not provided to URS for the subject property, nor was obtaining a title report within URS' scope of work.

3.2 ENVIRONMENTAL LIENS OR ACTIVITY AND USE LIMITATIONS

No information regarding the existence of environmental liens or activity and use limitations associated with the subject property was provided to URS by SJRRP. URS ordered an environmental liens and activity and use limitations report from EDR for the Project area. The information received from EDR indicated that there are no environmental liens or activity and use limitations reported for the Project area. A copy of the environmental liens and activity and use limitations report is included in Attachment A.

3.3 SPECIALIZED KNOWLEDGE

No specialized knowledge, beyond what is discussed throughout this report, was conveyed to URS during the preparation of this report.

3.4 VALUATION REDUCTION FOR ENVIRONMENTAL ISSUES

No information was conveyed to URS that the property value of the subject property has been reduced due to environmental issues.

3.5 OWNER, SITE MANAGER AND OCCUPANT INFORMATION

The Project area along the San Joaquin River between the Chowchilla Bifurcation Structures and the Mendota Dam is owned by the United States Bureau of Reclamation and the California Department of Water Resources. Portions of the existing river corridor in Reach 2B are privately owned.

3.6 REASON FOR CONDUCTING PHASE I ESA

The SJRRP Team indicated that this Phase I ESA was requested in connection with the San Joaquin River Restoration Project Alternatives EIR.

3.7 OTHER USER-PROVIDED INFORMATION

URS reviewed the "San Joaquin River Restoration Program Draft Program Environmental Impact Statement/Report" prepared by SJRRP, dated April 2011. The report indicated the following:

- One site in Reach 2 is listed in the State Water Resources Control Board (SWRCB) Geotracker database. The Mendota Landfill is considered by SWRCB to have open status and potential volatile organic compound contamination.

The open status and potential contamination of the Mendota Landfill was not confirmed EDR, which states that the Mendota Solid Waste Disposal facility was a permitted solid waste disposal site that was clean closed on December 31, 1981. Since the landfill is not within the boundaries of the Project area, and it is downgradient of the Project area, the Mendota Landfill is not considered a potential REC.

No sites listed in the Department of Toxic Substances Control Board (DTSC) Cortese List, SWRCB Geotracker and Environmental Protection Agency (EPA) Enviromapper databases are located in the Chowchilla Bypass portion of the Project area. Contaminated sites, however, are likely to occur near tributaries of the Chowchilla Bypass.

4.1 STANDARD ENVIRONMENTAL RECORDS

A regulatory database search report was prepared for the subject property by EDR on October 31, 2011 in accordance with the ASTM recommended guidelines, and is presented in Attachment A in electronic format. EDR reviews databases compiled by federal, state, and local governmental agencies. URS reviewed the EDR database to evaluate whether activities on or near the subject property have the potential to create a REC on the subject property. The EDR report searches properties within a specified distance that in some instances extends beyond the ASTM standard search radii.

The regional topography in the vicinity of the subject property has an overall slope to the west per the USGS topographic map. Therefore, as shallow groundwater flow would be expected to generally follow the topographic gradient, groundwater is expected to predominantly flow to the west. Therefore, sites located east of the Project area are considered to be topographically and hydrologically upgradient.

The goal of reviewing the database report is to identify facilities that have known and documented environmental problems that may negatively impact the subject property. Subject property and adjacent property listings are discussed below. Other listed facilities, which are not listed in the database as “closed” or “no further action” (including “No Further Remedial Action Planned” or NFRAP), or are located topographically upgradient of the subject property, within the database search distances are discussed below.

The following sites within the Project area, or on the boundary of the specified Project area, were identified in the database report:

- Paramount Farming Company, 10317 Eastside Drive, Firebaugh, CA
- Mendota Solid Waste Disposal, ½ mile east of Bass Avenue, Mendota, CA
- Frank A Logoluso Farms, 2369 San Mateo Avenue, Mendota, CA
- AES Mendota/Covanta Mendota LP, 400 Guillen Parkway, Mendota, CA

Paramount Farming Company at 10317 Eastside Drive in Firebaugh, CA, is located on the northern boundary of the Project area. The site was listed in the HAZNET database, a DTSC database of hazardous waste manifests. The site has been identified as having 2.4 tons of asbestos containing waste, and the disposal method is listed as landfill or surface impoundment that will be closed as a landfill (to include on-site treatment and/or stabilization). The site represents a potential environmental concern to the Project area due to the presence of asbestos containing waste.

Mendota Solid Waste Disposal is located half a mile east of Bass Avenue, near the Fresno Slough in Mendota, CA. The site is located on the southwestern boundary of the Project area, near the Mendota Pool. The site was listed in the Integrated Waste Management Board’s Solid Waste Information System (SWIS) database as a Solid Waste Facility/Landfill (SWF/LF) site. The Mendota Solid Waste Disposal facility was a permitted solid waste disposal site that was clean closed on December 31, 1981. The site is not expected to represent an environmental concern to the Project area.

Frank A. Logoluso Farms at 2369 San Mateo Avenue in Mendota, CA, is located within the Project area, south of the San Joaquin River. The site was listed in the HAZNET database, a DTSC database of hazardous waste manifests. The site has been identified as having 0.3753 tons of waste oil and mixed oil. The site is not expected to represent an environmental concern to the Project area.

AES Mendota/Covanta Mendota LP at 400 Guillen Parkway in Mendota, CA, is located on the western boundary of the Project area, near Mendota Airport. The biomass power plant was listed in several federal and California databases, as described below:

1. Federal Records
   - Resource Conservation and Recovery Act (RCRA) Small Quantity Generator (RCRA-SQG) with no violations.
   - Facility Index System (FINDS).
2. State and Local Records
   - California Water Resources Control Board (SWRCB) Waste Management Unit Database System (WMUDS/SWAT) -- The facility generates waste as part of the industrial/manufacturing process.
   - SWRCB Waste Discharge System (WDS) -- The facility treats and/or disposes of liquid or semisolid wastes as part of its industrial/manufacturing process, and has an Active status to have a continuous or seasonal discharge that is under Waste Discharge Requirements.
   - SWRCB Spills, Leaks, Investigations and Cleanup (SLIC) program – The facility has had an open site assessment status with the Central Valley RWQCB since April 20, 2010, due to an unauthorized release from an underground storage tank. Corrective action is underway.
   - CUPA Fresno – The facility is listed as a large hazardous materials handler and large quantity hazardous waste generator; contaminated site; and has aboveground storage tank (AST) capacity of 1,320 to 9,999 gallons.
   - AST – The facility has an AST capacity of 1,320 gallons.
   - SWRCB Enforcement Actions (ENF) – Notice of violation (NOV) issued on April 12, 2004 for numerous violations of Waste Discharge Requirements, including freeboard level being less than 2 feet, primary liner leaking, and unauthorized discharge to land from sprayer. An unknown NOV was issued on September 15, 2000. An additional NOV was issued on August 24, 2000, in regards to a workplan by Geological Technics, Inc. to address an NOV received on June 26, 2000. The NOV requested additional documentation of a concrete cover. The June 26, 2000 NOV was in regards to WDR violations in which electrical conductance, total dissolved solids, chloride, and sulfate concentrations in downgradient well MW-2 had increased to above background levels. An NOV issued on June 12, 2000 indicated that there were five violations of the WDR Order No. 97-135.
   - HAZNET -- The facility was listed in the HAZNET database, a DTSC database of hazardous waste manifests. In 2000, the facility was identified as having 1.2718 tons

of waste oil and mixed oil. In 1999, the facility was identified as having 0.3336 tons of waste oil and mixed oil; 0.6545 tons of aqueous solution with total organic residues less than 10 percent; 0.1328 tons of liquids with halogenated organic compounds; and 0.0417 tons of hydrocarbon solvents (benzene, hexane, Stoddard, etc.).

- Toxics and criteria pollutant emissions data collected by the Air Resources Board (ARB) and local air pollution agencies (EMI) – The facility was listed as having annual air emissions of total organic hydrocarbon gases, reactive organic gases, carbon monoxide emissions, oxides of nitrogen, oxides of sulphur, particulate matter, and particulate matter less than 10 micrometers.

The AES Mendota/Covanta Mendota LP facility is located downgradient of the Project area and on the southwestern boundary. The site is not expected to represent a potential environmental concern to the Project area.

The following sites adjacent to the Project area were identified in the database report:

- Mendota Junior High School Site, 1200 Belmont Avenue, Mendota, CA

The Mendota Junior High School Site at 1200 Belmont Avenue in Mendota, CA is located approximately 0.75 miles downgradient of the southwestern corner of the Project area. The site was listed in the state school (SCH) database containing proposed and existing school sites that are being evaluated by DTSC for possible hazardous materials contamination. The site was also listed in DTSC's ENVIROSTOR database of sites that have known contamination. The past use of the site was agricultural, row crops. A Preliminary Endangerment Assessment Report was prepared on May 22, 2006. The site received a No Further Action status on May 22, 2006. Since the site is 0.75 miles downgradient of the southwestern corner of the Project area, the site is not expected to represent an environmental concern to the Project area.

Forty unmappable/orphan sites were listed in the EDR report. Due to poor or inadequate address information they could not be accurately located by EDR. Based on URS' review of available address information, approximately 3 of the 40 unmappable/orphan sites may be located within one mile of the Project area. These sites include the following:

- Ray Baldridge, 6353 Road 8 ½, Firebaugh, CA
- Silver Creek Packing Company Shop, 2158 Bass Avenue, Mendota, CA
- Mendota Site, 1 mile northeast of Highway 33

Ray Baldridge at 6353 Road 8 ½ in Firebaugh, CA is located within one mile northwest and downgradient of the Project area. This site is listed in the state SWEEPS underground storage tank (UST) database maintained by the SWRCB, because it has an UST. Since the site is downgradient of the northwestern corner of the Project area, the site is not expected to represent an environmental concern to the Project area.

Silver Creek Packing Company Shop at 2158 Bass Avenue in Mendota, CA is located within one mile west and downgradient of the Project area. The site is listed in the HIST CORTESE, LUST and HIST LUST databases because it had a leaking UST (LUST), according to the EDR report. Since the site is downgradient of the western boundary of the Project area, the site is not expected to represent an environmental concern to the Project area.

The Mendota Site located one mile northeast of Highway 33 in Mendota, CA is located within one mile west and downgradient of the Project area. The site is listed in the CERC-NFRAP database, a federal database of Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) No Further Remedial Action Planned sites. Since the site is downgradient of the western boundary of the Project area, the site is not expected to represent an environmental concern to the Project area.

4.2 ADDITIONAL ENVIRONMENTAL RECORD SOURCES

URS reviewed the SWRCB GeoTracker, DTSC Envirostor and EPA Envirofacts databases for additional site information. The SWRCB GeoTracker database listed several other LUST sites within 1 mile of the southwestern boundary of the Project area; however, these sites are downgradient and sufficiently far enough away from the project area that they are not expected to represent an environmental concern to the Project area.

URS did not attempt to contact public agencies for this Phase I ESA.

4.3 HISTORICAL USE INFORMATION

Based on a review of the available historical documentation, the Project area was undeveloped land used for agricultural purposes from at least 1925 until the 1950s. From the late 1950s until the present, the Project area was developed with the Mendota Dam, the Mendota Pool, the Chowchilla Bifurcation Structures, sewage treatment plant, levees, marshlands, and farmland.

Copies of pertinent portions of historical research documents reviewed and discussed below are presented in Attachment B in electronic format.

4.4 AERIAL PHOTOGRAPHS

URS ordered historical aerial photographs covering the subject property from EDR for the years 1937, 1955, 1965, 1974, 1981, 1987, 1998, 2009 and 2010. The aerial photographs were reviewed to identify potential sources of visible contamination at the time the photographs were taken. A summary evaluation of the above referenced aerial photographs follows:

1937 – Review of the 1937 aerial photo revealed that the Project area and adjacent properties were undeveloped and agricultural/ranch land. State Highways 130 and 180 were present near the slough. In addition, unimproved roads criss-crossed the Project area.

1955 – Many changes to the Project area occurred between 1937 and 1955. The Mendota Dam was depicted in the photo, and a sewage disposal facility with one building and two ponds had been built adjacent to the Fresno Slough. The Fresno Slough was larger than in 1937, and areas that were once shrublands along the Slough were shown as being covered in water. Mowry Lake was no longer visible. Levees were built along the eastside of the Slough and on the north and south banks of the San Joaquin River. Willow Slough was now evident north of the river, and linked to the river near a gaging station. Shrublands were more evident on the banks of the river, and the inundated areas south of the river appear to have been converted to farms. Ranches and farms were evident in the Project area.

1965 – The Mendota Pool was depicted, and the sewage disposal facility had one building and two pools adjacent to the Fresno Slough, south of Mendota Pool. The city of Mendota is shown, as is the small reservoir/water tank just east of the city, and gas and water wells were scattered north of the San Joaquin River. The inundated areas east of the Slough had become much smaller, and most of it had been converted to farmland. Ranches and farms were evident in the Project area. No other major changes were depicted to the Project area or adjacent properties from 1955.

1974 – The sewage disposal facility grew much larger between 1965 and 1974. In 1974, the facility had two buildings, and four ponds, and two to three marshland areas. The Mendota Pool had also been made larger, and the Mowry Canal was gone. Willow Slough/Chowchilla Canal north of the river had become much larger and appeared to be used as a bypass, with levees on both sides of the Canal, and a gaging station at the San Joaquin River. Formerly inundated areas east of the Fresno Slough appeared dry, and converted to farmland. A large lake/pond is shown just south of a bend in the San Joaquin River. A portion of the Mendota Airport runway is shown west of the Fresno Slough. Ranches and farmland are depicted on both sides of the river, and in the Project area.

1981 – The sewage disposal plant had grown much larger, and now had nine to ten ponds, and no buildings. According to the EDR report, the Mendota Solid Waste Disposal Facility (depicted in the same location as the sewage disposal plant) was closed in 1981. The Mendota Airport runway and buildings are shown west of the Fresno Slough. The Chowchilla Canal north of the river was shown and appeared to be used as a bypass, with levees on both sides of the Canal, and a gaging station at the San Joaquin River. Marshlands were still present east of the Fresno Slough, but the ponds were much smaller, if not converted to farmland. The large lake/pond shown just south of a bend in the San Joaquin River, appeared smaller and drier. Ranches and farmland are depicted on both sides of the river, and in the Project area.

1987 – The Mendota Solid Waste Disposal Facility (depicted in the same location as the sewage disposal plant) still had 10 ponds, but four of them were smaller, possibly buried with soil. Some kind of stadium-like structure was constructed east of the Fresno Slough and south of the Project area. The lake/pond shown just south of a bend in the San Joaquin River had nearly disappeared. No other major changes were depicted to the Project area or adjacent properties from 1981.

1998 – AES Mendota/Covanta Mendota LP biomass plant and associated buildings is shown west of the Fresno Slough, near Mendota Airport. The area of the former sewage disposal plant/Mendota Solid Waste Disposal Facility had undergone changes, and appeared to have numerous ponds and plots of land in the vicinity. Lines, possibly transmission lines, could be seen near the biomass plant west of the Fresno Slough. Ranches and farms were scattered throughout the Project area, and an area south of the river appeared to have been converted to vineyards. Some inundated areas were visible, but most of the land around the Fresno Slough, San Joaquin River and Chowchilla Bypass appeared to be used as farmland.

2009 – No other major changes were depicted to the Project area or adjacent properties from 1998.

2010 – More development is evident in the area of the former sewage disposal plant/Mendota Solid Waste Disposal Facility. Some areas of inundation are shown east of the Fresno Slough, but no other major changes were depicted to the Project area or adjacent properties from 2009.

Based on a review of the historical aerial photographs, no RECs were identified.

4.5 TOPOGRAPHIC MAPS

URS reviewed USGS 15-minute series topographic maps of the Tranquility, California quadrangle dated 1946, and the Firebaugh, California quadrangle provided by EDR dated 1948, 1959 and 1962; and 7.5-minute series topographic maps of the Tranquility, California quadrangle dated 1924, 1947, 1948, 1956 and 1984; the Firebaugh, California quadrangle dated 1956 and 1984; and the Mendota Dam, California quadrangle dated 1924, 1947, 1948, 1956, 1984. A summary evaluation of the topographic maps follows:

1924 – The Project area and adjacent properties were depicted as undeveloped and agricultural/ranch land. The Fresno Slough was named the Kings River Slough in 1924. An unnamed dam was located in the same location as the present Mendota Dam, and was at an elevation of 160 feet above mls. Ponds and lakes are shown east of the Slough, and sandy soil is shown on the banks of the San Joaquin River north of the dam. State Highways 130 and 180 were present near the Kings River Slough, and the Southern Pacific Railroad crossed over the Kings River Slough south of the Project area. The Southern Pacific Railroad route ran north and south and east and west through the Project area. In addition, unimproved roads criss-crossed the Project area. Pomona Ranch and White House Ranch were depicted north of the San Joaquin River, likely within the Project area. Herminghaus Ranch was depicted southeast of the Project area, but north of State Highway 180. Mowry Lake was shown just south of the San Joaquin River, and the Columbia Canal and the Mowry Canal were shown north and south and of the river, respectively.

1946 – The Project area and adjacent properties were still depicted as undeveloped and agricultural/ranch land. Kings River Slough name was changed to the Fresno Slough. The town of Tranquility had been built, and many unimproved roads criss-crossed the area south of Whites Bridge Road/State Highway 180 and north of Tranquility. The city street blocks of Tranquility are evident south of the Fresno Slough. The Fresno Slough By-Pass was depicted south of Southern Pacific Railroad, near the town of Tranquility. Levees were built south and north of the Fresno Slough. Heminghuas Ranch had two buildings in 1946.

1947 – The dam on the San Joaquin River was labeled the Mendota Dam. The town of Mendota had been built, and the Chowchilla Canal was depicted north of the San Joaquin River. The Pomona Ranch north of the river had grown and increased the number of buildings, and the Mowry Ranch was shown on the southern bank of the San Joaquin River, east of the Fresno Slough. Small levees are evident between the Mowry Ranch and the Mowry Canal. Ponds and lakes are depicted east of the Slough and south of the river. Gas wells are shown north of the Project area.

1948 – Levees were built on both the north and south banks of the San Joaquin River. Shrubland was depicted around the San Joaquin River and the Fresno Slough. Sandy soil is shown on the banks of the San Joaquin River north of the Mendota Dam. Lakes and ponds were present east of the Fresno Slough and south of the San Joaquin River. Little else had changed from 1947.

1956 – Many changes to the Project area occurred between 1948 and 1956. The Mendota Pool was depicted, and a gaging station had been installed on the Mendota Dam. The Mendota Dam elevation had decreased to 155 ft above mls. A sewage disposal facility with one building and two ponds had been built adjacent to the Fresno Slough, south of Mendota Pool. The Fresno Slough was larger than in previous years, and areas that were once shrublands along the Slough were shown as being covered in water. The lakes/ponds that were adjacent to the east of the Slough had become larger, and channels were evident linking the Slough to the lakes/ponds. Mowry Lake was no longer visible. Levees were built along the eastside of the Slough and on the north and south banks of the San Joaquin River. Shrublands were more evident on the banks of the river, and the inundated areas east of the Slough and south of the river were gone. The levees had pumps, and the levees joined east of the Slough and south of the river. A flume pump was added to the Columbia Canal on the north bank of the river. The Delta-Mendota Canal with a lock was depicted southwest of the Mendota Pool. Helm Ditch was constructed west of the river and north of Mendota Dam near Helm Ranch. Willow Slough was now evident north of the river, and linked to the river near the gaging station. Mowry Ranch was still present, and Pomona Ranch had grown and added more buildings. Yearout Ranch was shown north of State Highway 180 and east of the Slough. The town of Mendota grew larger, and a reservoir was located east of the town. Gas and water wells were scattered north of the San Joaquin River. The land south of Whites Bridge Road/State Highway 180 and east of the Fresno Slough near the town of Tranquility had been converted into marshland and ponds. The land north of State Highway 180 and east of the Slough had been turned into fish rearing ponds and marshland.

1962 – No major changes were depicted to the Project area or adjacent properties. The town of Mendota had grown larger. Pomona Ranch had downsized, and Mowry Ranch was still present.

1984 – The sewage disposal plant had grown much larger, and now had nine to ten ponds. According to the EDR report, the Mendota Solid Waste Disposal (depicted in the same location as the sewage disposal plant) was closed in 1981. The Mendota Pool had also been made larger, and the Mowry Canal was gone. The Chowchilla Canal north of the river had become much larger and appeared to be used as a bypass. Mowry Ranch had grown to three buildings, Helm Ranch had grown larger and Pomona Ranch had gotten smaller. The fish rearing ponds north of State Highway 180 had grown much larger than in 1962, and it appears that vineyards had been planted near Yearout Ranch and on both sides of Southern Pacific Railroad. Marshlands were still present east of the Fresno Slough, but the ponds were gone. The area east of Fresno Slough and south of State Highway 180 had been designated Alkali Sink Ecological Reserve.

Based on a review of the historical topographic maps, no RECs were identified.

4.6 SANBORN FIRE INSURANCE MAPS

URS ordered Sanborn Fire Insurance Maps (Sanborns) for the Project area from EDR. EDR's response indicated that Sanborn map coverage is not available for the subject property and its vicinity.

4.7 CITY DIRECTORIES

URS did not request historical city directory information from EDR for the Project area, since the Project area is so large, and no cities are present within the Project area.

5.1 METHODOLOGY AND LIMITING CONDITIONS

Mr. Joe Morgan of URS' Oakland office toured the Site on August 2, 2011 as part of an EIR team tour. The tour was conducted by the team leaders from Bureau of Reclamation, Cardno Entrix and URS. The weather was clear and hot.

The tour started at the Mendota Dam/Pool. The team observed the Mendota Dam and the Mendota Pool. The team also observed the nearby downstream portion of the San Joaquin River past the Dam with riverine vegetation along the riverbank, a public access point, and the surrounding agricultural land devoted to row crops. The team also observed a small residential community downgradient of the Mendota Dam.

The team then drove to the Chowchilla Bifurcation Structure and observed: the two dams, the up- and down-stream portion of the river, and the Chowchilla By-Pass. The Chowchilla By-Pass was dry during the tour, as it is only used for flood control purposes. The banks of the river were lined with riverine vegetation. All three Dams within the project area are within fenced enclosures with locked gates, and are not open to the public.

The surrounding land is used for agricultural purposes, including: row crops, orchards, and vineyards. Two to three farmhouses with assorted farm buildings were noted on the southeast portion of the project site. One outbuilding was constructed of older style sheet metal, likely painted with lead containing paint. The same farmstead may have an underground storage tank.

5.2 INTERIOR AND EXTERIOR OBSERVATIONS

The Mendota Dam dams the San Joaquin River and creates the Mendota Pool, which is used to support the surrounding agricultural land uses. Chowchilla Bifurcation Structures are used for flood control purposes by the California Department of Water Resources. The normal San Joaquin river flow is released into the San Joaquin river channel. Under flood conditions, the bifurcation dam is opened to spilt the flow between the San Joaquin River channel and the normally dry Chowchilla by-pass channel.

Visual observations were made of the surrounding properties to identify potential sources of environmental concern. Properties in the immediate vicinity of the subject property were observed during the site tour. Land uses in the immediate vicinity of the subject property were mostly agricultural. A small cluster of homes was noted across the road downstream from the Mendota Dam. A public park was noted upstream from the Mendota Dam.

5.3 HAZARDOUS SUBSTANCES AND PETROLEUM PRODUCTS

Potential hazardous materials likely stored and used within the project area include the following categories:

- Historical and currently used herbicides and pesticides.
- Fuels, such as diesel and gasoline.
- Lead-based paint.
- Asbestos containing materials.

- Solvents for solvent plastic-pipe welding.
- Anti-freeze and lubricants for farm equipment and family vehicles.
- Lead acid batteries.
- Fertilizers and other soil amendments.
- Electronic equipment: transformers, transformer oils.

5.4 UNDERGROUND/ABOVEGROUND STORAGE TANKS

URS observed one potential underground storage tank (USTs) vent pipe. The Project area is not listed in the environmental databases as having registered USTs.

5.5 PCB-CONTAINING AND HYDRAULIC EQUIPMENT

One transformer was noted by the farmhouses on the eastern end of the project site. No other transformers were observed by URS on the subject property. A number of electrical service lines were noted on the subject property to service the bifurcation structure, farm houses, and irrigation pumps. No high-tension power lines, utility transmission equipment, or substations were observed on or adjacent to the subject property. Pacific Gas and Electric (PG&E) has removed all PCBs from their system, so only privately-owned old electrical equipment is suspect for PCB containing di-electric fluids.

5.6 SOLID AND HAZARDOUS WASTES

Solid wastes generated by the families that live in the Project area are disposed of by the local garbage company, Madera Disposal Inc.

5.7 DRAINS AND SUMPS

No drains or sumps were observed. Stormwater ditches were observed alongside the roads in the area.

5.8 WASTEWATER

Sanitary wastewater is likely discharged to the homeowners' septic tanks.

5.9 UTILITIES

URS assumes that farm houses use wells for domestic and agricultural water supply. Electric services are provided by PG&E. Most homes in the agricultural area are likely serviced by propane gas for home heating.

5.10 WELLS

A number of agricultural water wells were observed during the site tour. URS assumes that the two to three farm houses are served by wells for drinking water. URS ordered a Well Search

Report from EDR (Attachment C). Numerous state water wells and two state oil and gas wells identified as being located within the Project area. An additional six state oil and gas wells are located within a one mile radius of the Project area.

5.11 PITS, PONDS, AND LAGOONS

No pits, ponds or lagoons were observed on the subject property during the property visit.

5.12 OTHER PHYSICAL EVIDENCE OF CONTAMINATION

No physical evidence of contamination was observed on the subject property during URS' site reconnaissance.

URS has performed a Phase I ESA in conformance with the scope and limitations of ASTM Practice E 1527-05 of the Mendota Pool Bypass and Reach 2B Improvements Project located in the area of the Chowchilla Bifurcation Structures and downstream to Mendota Dam in Mendota, Fresno and Madera Counties, California (subject property). Any exceptions to, or deletions from, this practice are described in Section 1.4 of this report. This assessment has revealed two RECs or HRECs in connection with the subject property:

- Paramount Farming Company at 10317 Eastside Drive in Firebaugh, CA, is located on the northern boundary of the Project area. The site has been identified as having 2.4 tons of asbestos containing waste, and the disposal method is listed as landfill or surface impoundment that will be closed as a landfill (to include on-site treatment and/or stabilization). The site represents a potential environmental concern to the Project area due to the presence of asbestos containing waste.
- Because the Project area was historically used as farmland, pesticide/herbicide residuals may be present in the soil. However, features were not identified (e.g., impoundments, bulk storage facilities or crop dusting air strips) that suggested the handling or storage of significant quantities of pesticides and/or herbicides in the Project area. The Project area represents a historical potential environmental concern to the Project area due to potential for pesticide/herbicide residuals may be present in the soil.

During this assessment, URS identified no significant data gaps in reasonably ascertainable information reviewed and described in this report regarding the Project area, which would be expected to impact our conclusions.

We declare that, to the best of our professional knowledge and belief, we meet the definition of Environmental Professional as defined in §312.10 of 40 CFR 312 and we have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject property. We have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

April Ann Giangerelli	Joe Morgan
Senior Environmental Engineer	Senior Project Manager/Senior Reviewer

ASTM, Standard Practice Environmental Site Assessments: *Phase I Environmental Site Assessment Process*, Standard E 1527-05. November 2005.

EDR, The EDR Aerial Photo Decade Package, Inquiry Number 3217783.1s, dated December 8, 2011.

EDR, The EDR Historical Topographic Map Report, Inquiry Number 3196001.2, dated October 31, 2011.

EDR, The EDR DataMap™ Area Study, Inquiry Number 3196001.1s, dated October 31, 2011.

EDR, The EDR DataMap™ Well Search Report, Inquiry Number 3196001.1w, dated December 1, 2011.

EDR, The EDR Sanborn® Map Report – No Coverage, Inquiry Number 3217246.1, dated December 1, 2011.

Attachment A

Regulatory Records Documentation

San Joaquin River Restoration Project Alternatives
Mendota, CA 93640

Inquiry Number: 3196001.1s
October 31, 2011

EDR DataMap™ Area Study

Environmental Data Resources Inc

440 Wheelers Farms Road
Milford, CT 06461
Toll Free: 800.352.0050
www.edrnet.com

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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EXECUTIVE SUMMARY

TARGET PROPERTY INFORMATION

ADDRESS

MENDOTA, CA 93640
MENDOTA, CA 93640

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records within the requested search area for the following databases:

FEDERAL RECORDS

NPL	National Priority List
Proposed NPL	Proposed National Priority List Sites
Delisted NPL	National Priority List Deletions
NPL LIENS	Federal Superfund Liens
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
CERC-NFRAP	CERCLIS No Further Remedial Action Planned
LIENS 2	CERCLA Lien Information
CORRACTS	Corrective Action Report
RCRA-TSDF	RCRA - Treatment, Storage and Disposal
RCRA-LQG	RCRA - Large Quantity Generators
RCRA-CESQG	RCRA - Conditionally Exempt Small Quantity Generator
RCRA-NonGen	RCRA - Non Generators
US ENG CONTROLS	Engineering Controls Sites List
US INST CONTROL	Sites with Institutional Controls
ERNS	Emergency Response Notification System
HMIRS	Hazardous Materials Information Reporting System
DOT OPS	Incident and Accident Data
US CDL	Clandestine Drug Labs
US BROWNFIELDS	A Listing of Brownfields Sites
DOD	Department of Defense Sites
FUDS	Formerly Used Defense Sites
LUCIS	Land Use Control Information System
CONSENT	Superfund (CERCLA) Consent Decrees
ROD	Records Of Decision
UMTRA	Uranium Mill Tailings Sites
DEBRIS REGION 9	Torres Martinez Reservation Illegal Dump Site Locations
ODI	Open Dump Inventory
MINES	Mines Master Index File
TRIS	Toxic Chemical Release Inventory System
TSCA	Toxic Substances Control Act
FTTS	FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
HIST FTTS	FIFRA/TSCA Tracking System Administrative Case Listing
SSTS	Section 7 Tracking Systems
ICIS	Integrated Compliance Information System

EXECUTIVE SUMMARY

PADS	PCB Activity Database System
MLTS	Material Licensing Tracking System
RADINFO	Radiation Information Database
RAATS	RCRA Administrative Action Tracking System
SCRD DRYCLEANERS	State Coalition for Remediation of Drycleaners Listing
US HIST CDL	National Clandestine Laboratory Register
PCB TRANSFORMER	PCB Transformer Registration Database
FEDERAL FACILITY	Federal Facility Site Information listing
COAL ASH DOE	Sleam-Electric Plan Operation Data
FEMA UST	Underground Storage Tank Listing
COAL ASH EPA	Coal Combustion Residues Surface Impoundments List

STATE AND LOCAL RECORDS

HIST Cal-Sites	Historical Calsites Database
CA BOND EXP. PLAN	Bond Expenditure Plan
Toxic Pits	Toxic Pits Cleanup Act Sites
NPDES	NPDES Permits Listing
Cortese	"Cortese" Hazardous Waste & Substances Sites List
HIST CORTESE	Hazardous Waste & Substance Site List
SWRCY	Recycler Database
LUST	Geotracker's Leaking Underground Fuel Tank Report
CA FID UST	Facility Inventory Database
UST	Active UST Facilities
HIST UST	Hazardous Substance Storage Container Database
LIENS	Environmental Liens Listing
SWEEPS UST	SWEEPS UST Listing
CHMIRS	California Hazardous Material Incident Report System
LDS	Land Disposal Sites Listing
MCS	Military Cleanup Sites Listing
Notify 65	Proposition 65 Records
DEED	Deed Restriction Listing
VCP	Voluntary Cleanup Program Properties
DRYCLEANERS	Cleaner Facilities
WIP	Well Investigation Program Case List
CDL	Clandestine Drug Labs
RESPONSE	State Response Sites
HAULERS	Registered Waste Tire Haulers Listing
HWP	EnviroStor Permitted Facilities Listing
MWMP	Medical Waste Management Program Listing
PROC	Certified Processors Database
HWT	Registered Hazardous Waste Transporter Database

TRIBAL RECORDS

INDIAN RESERV	Indian Reservations
INDIAN ODI	Report on the Status of Open Dumps on Indian Lands
INDIAN LUST	Leaking Underground Storage Tanks on Indian Land
INDIAN UST	Underground Storage Tanks on Indian Land
INDIAN VCP	Voluntary Cleanup Priority Listing

EDR PROPRIETARY RECORDS

Manufactured Gas Plants	EDR Proprietary Manufactured Gas Plants

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified.

EXECUTIVE SUMMARY

Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

FEDERAL RECORDS

RCRA-SQG: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

A review of the RCRA-SQG list, as provided by EDR, and dated 06/15/2011 has revealed that there is 1 RCRA-SQG site within the searched area.

Site	Address	Map ID	Page
AES MENDOTA	***400 GUILLEN PARKWAY***	***4***	***5***

FINDS: The Facility Index System contains both facility information and "pointers" to other sources of information that contain more detail. These include: RCRIS; Permit Compliance System (PCS); Aerometric Information Retrieval System (AIRS); FATES (FIFRA [Federal Insecticide Fungicide Rodenticide Act] and TSCA Enforcement System, FTTS [FIFRA/TSCA Tracking System]; CERCLIS; DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes); Federal Underground Injection Control (FURS); Federal Reporting Data System (FRDS); Surface Impoundments (SIA); TSCA Chemicals in Commerce Information System (CICS); PADS; RCRA-J (medical waste transporters/disposers); TRIS; and TSCA. The source of this database is the U.S. EPA/NTIS.

A review of the FINDS list, as provided by EDR, and dated 04/14/2010 has revealed that there is 1 FINDS site within the searched area.

Site	Address	Map ID	Page
AES MENDOTA	***400 GUILLEN PARKWAY***	***4***	***5***

STATE AND LOCAL RECORDS

SCH: This category contains proposed and existing school sites that are being evaluated by DTSC for possible hazardous materials contamination. In some cases, these properties may be listed in the CalSites category. depending on the level of threat to public health and safety or the. environment they pose.

A review of the SCH list, as provided by EDR, and dated 09/13/2011 has revealed that there is 1 SCH site within the searched area.

Site	Address	Map ID	Page
MENDOTA JUNIOR HIGH SCHOOL SIT	***1200 BELMONT AVENUE***	***5***	***22***

EXECUTIVE SUMMARY

SWF/LF: The Solid Waste Facilities/Landfill Sites records typically contain an inventory of solid waste disposal facilities or landfills in a particular state. The data come from the Integrated Waste Management Board's Solid Waste Information System (SWIS) database.

A review of the SWF/LF list, as provided by EDR, and dated 08/22/2011 has revealed that there is 1 SWF/LF site within the searched area.

Site	Address	Map ID	Page
MENDOTA SOLID WASTE DISPOSAL	1/2 MI E/O BASS AVE BY	2	3

WDS: California Water Resources Control Board - Waste Discharge System.

A review of the WDS list, as provided by EDR, and dated 06/19/2007 has revealed that there is 1 WDS site within the searched area.

Site	Address	Map ID	Page
AES MENDOTA	***400 GUILLEN PARKWAY***	***4***	***5***

WMUDS/SWAT: The Waste Management Unit Database System is used for program tracking and inventory of waste management units. The source is the State Water Resources Control Board.

A review of the WMUDS/SWAT list, as provided by EDR, and dated 04/01/2000 has revealed that there is 1 WMUDS/SWAT site within the searched area.

Site	Address	Map ID	Page
AES MENDOTA	***400 GUILLEN PARKWAY***	***4***	***5***

SLIC: SLIC Region comes from the California Regional Water Quality Control Board.

A review of the SLIC list, as provided by EDR, and dated 09/19/2011 has revealed that there is 1 SLIC site within the searched area.

Site	Address	Map ID	Page
AES MENDOTA	***400 GUILLEN PARKWAY***	***4***	***5***
Facility Status: Open - Site Assessment			

AST: The Aboveground Storage Tank database contains registered ASTs. The data come from the State Water Resources Control Board's Hazardous Substance Storage Container Database.

A review of the AST list, as provided by EDR, and dated 08/01/2009 has revealed that there is 1 AST site within the searched area.

Site	Address	Map ID	Page
AES MENDOTA	***400 GUILLEN PARKWAY***	***4***	***5***

EXECUTIVE SUMMARY

ENF: A listing of Water Board Enforcement Actions. Formal is everything except Oral/Verbal Communication, Notice of Violation, Expedited Payment Letter, and Staff Enforcement Letter.

A review of the ENF list, as provided by EDR, and dated 08/15/2011 has revealed that there is 1 ENF site within the searched area.

Site	Address	Map ID	Page
AES MENDOTA	***400 GUILLEN PARKWAY***	***4***	***5***

HAZNET: The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000-1,000,000 annually, representing approximately 350,000-500,000 shipments. Data from non-California manifests & continuation sheets are not included at the present time. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, & disposal method. The source is the Department of Toxic Substance Control is the agency

A review of the HAZNET list, as provided by EDR, and dated 12/31/2010 has revealed that there are 3 HAZNET sites within the searched area.

Site	Address	Map ID	Page
PARAMOUNT FARMING COMPANY	10317 EASTSIDE DR	1	3
FRANK A LOGOLUSO FARMS	2369 SAN MATEO AVE	3	4
AES MENDOTA	***400 GUILLEN PARKWAY***	***4***	***5***

EMI: Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies

A review of the EMI list, as provided by EDR, and dated 12/31/2008 has revealed that there is 1 EMI site within the searched area.

Site	Address	Map ID	Page
AES MENDOTA	***400 GUILLEN PARKWAY***	***4***	***5***

ENVIROSTOR: The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

A review of the ENVIROSTOR list, as provided by EDR, and dated 09/13/2011 has revealed that there is 1 ENVIROSTOR site within the searched area.

Site	Address	Map ID	Page
MENDOTA JUNIOR HIGH SCHOOL SIT	***1200 BELMONT AVENUE***	***5***	***22***
Status: No Further Action			

EXECUTIVE SUMMARY

Please refer to the end of the findings report for unmapped orphan sites due to poor or inadequate address information.

MAP FINDINGS SUMMARY

Database	Total Plotted
FEDERAL RECORDS	
NPL	0
Proposed NPL	0
Delisted NPL	0
NPL LIENS	0
CERCLIS	0
CERC-NFRAP	0
LIENS 2	0
CORRACTS	0
RCRA-TSDF	0
RCRA-LQG	0
RCRA-SQG	1
RCRA-CESQG	0
RCRA-NonGen	0
US ENG CONTROLS	0
US INST CONTROL	0
ERNS	0
HMIRS	0
DOT OPS	0
US CDL	0
US BROWNFIELDS	0
DOD	0
FUDS	0
LUCIS	0
CONSENT	0
ROD	0
UMTRA	0
DEBRIS REGION 9	0
ODI	0
MINES	0
TRIS	0
TSCA	0
FTTS	0
HIST FTTS	0
SSTS	0
ICIS	0
PADS	0
MLTS	0
RADINFO	0
FINDS	1
RAATS	0
SCRD DRYCLEANERS	0
US HIST CDL	0
PCB TRANSFORMER	0
FEDERAL FACILITY	0
COAL ASH DOE	0
FEMA UST	0
COAL ASH EPA	0
STATE AND LOCAL RECORDS	
HIST Cal-Sites	0

MAP FINDINGS SUMMARY

Database	Total Plotted
CA BOND EXP. PLAN	0
SCH	1
Toxic Pits	0
SWF/LF	1
WDS	1
WMUDS/SWAT	1
NPDES	0
Cortese	0
HIST CORTESE	0
SWRCY	0
LUST	0
CA FID UST	0
SLIC	1
UST	0
HIST UST	0
LIENS	0
SWEEPS UST	0
CHMIRS	0
LDS	0
MCS	0
AST	1
Notify 65	0
DEED	0
VCP	0
DRYCLEANERS	0
WIP	0
CDL	0
ENF	1
RESPONSE	0
HAZNET	3
EMI	1
ENVIROSTOR	1
HAULERS	0
HWP	0
MWMP	0
PROC	0
HWT	0

TRIBAL RECORDS

INDIAN RESERV	0
INDIAN ODI	0
INDIAN LUST	0
INDIAN UST	0
INDIAN VCP	0

EDR PROPRIETARY RECORDS

Manufactured Gas Plants	0

NOTES:

Sites may be listed in more than one database

1 **PARAMOUNT FARMING COMPANY** **HAZNET** **S109931342**
10317 EASTSIDE DR **N/A**
FIREBAUGH, CA 93622

HAZNET:

Year:	2008
Gepaid:	CAC002635016
Contact:	ROY CATANIA
Telephone:	5596591483
Mailing Name:	Not reported
Mailing Address:	10302 AVENUE 7 1/2
Mailing City,St,Zip:	FIREBAUGH, CA 936229611
Gen County:	Fresno
TSD EPA ID:	CAL000190080
TSD County:	San Joaquin
Waste Category:	Asbestos containing waste
Disposal Method:	LANDFILL OR SURFACE IMPOUNDMENT THAT WILL BE CLOSED AS LANDFILL(TO INCLUDE ON-SITE TREATMENT AND/OR STABILIZATION)
Tons:	2.4
Facility County:	Fresno

---

2 **MENDOTA SOLID WASTE DISPOSAL** **SWF/LF** **S102359954**
1/2 MI E/O BASS AVE BY SLOUGH **N/A**
MENDOTA, CA

SWF/LF (SWIS):

Region:	STATE
Facility ID:	10-AA-0008
Lat/Long:	36.4636100 / -120.22168
Owner Name:	County of Fresno Planning & Res. Mgmt.
Owner Telephone:	5592624259
Owner Address:	Not reported
Owner Address2:	2220 Tulare Street, Sixth Floor
Owner City,St,Zip:	Fresno, CA 93721
Operator:	County of Fresno Planning & Res. Mgmt.
Operator Phone:	5592624259
Operator Address:	Not reported
Operator Address2:	2220 Tulare Street, Sixth Floor
Operator City,St,Zip:	Fresno, CA 93721
Operator's Status:	Clean Closed
Permit Date:	Not reported
Permit Status:	Not reported
Permitted Acreage:	0
Activity:	Solid Waste Disposal Site
Regulation Status:	Permitted
Landuse Name:	Not reported
GIS Source:	Map
Category:	Disposal
Unit Number:	01
Inspection Frequency:	None
Accepted Waste:	Not reported
Closure Date:	12/31/1981
Closure Type:	Estimated
Disposal Acreage:	0
SWIS Num:	10-AA-0008
Waste Discharge Requirement Num:	Not reported
Program Type:	Not reported
Permitted Throughput with Units:	Not reported
Actual Throughput with Units:	Not reported
Permitted Capacity with Units:	Not reported

MENDOTA SOLID WASTE DISPOSAL (Continued) **S102359954**

Remaining Capacity:	Not reported
Remaining Capacity with Units:	Not reported

Region:	STATE
Facility ID:	10-AA-0008
Lat/Long:	36.4636100 / -120.22168
Owner Name:	County of Fresno Planning & Res. Mgmt.
Owner Telephone:	5592624259
Owner Address:	Not reported
Owner Address2:	2220 Tulare Street, Sixth Floor
Owner City,St,Zip:	Fresno, CA 93721
Operator:	County of Fresno Planning & Res. Mgmt.
Operator Phone:	5592624259
Operator Address:	Not reported
Operator Address2:	2220 Tulare Street, Sixth Floor
Operator City,St,Zip:	Fresno, CA 93721
Operator's Status:	Closed
Permit Date:	Not reported
Permit Status:	Not reported
Permitted Acreage:	0
Activity:	Large Volume Transfer/Proc Facility
Regulation Status:	Surrendered
Landuse Name:	Not reported
GIS Source:	Map
Category:	Transfer/Processing
Unit Number:	02
Inspection Frequency:	None
Accepted Waste:	Not reported
Closure Date:	Not reported
Closure Type:	Not reported
Disposal Acreage:	Not reported
SWIS Num:	10-AA-0008
Waste Discharge Requirement Num:	Not reported
Program Type:	Not reported
Permitted Throughput with Units:	0
Actual Throughput with Units:	Not reported
Permitted Capacity with Units:	0
Remaining Capacity:	Not reported
Remaining Capacity with Units:	Not reported

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3 **FRANK A LOGOLUSO FARMS** **HAZNET** **S103644753**
2369 SAN MATEO AVE **N/A**
MENDOTA, CA 93640

HAZNET:

Year:	1996
Gepaid:	CAL000124122
Contact:	FRANK A LOGOLUSO FARMS
Telephone:	2096748897
Mailing Name:	Not reported
Mailing Address:	7567 ROAD 28
Mailing City,St,Zip:	MADERA, CA 936379129
Gen County:	Fresno
TSD EPA ID:	CAD980887418
TSD County:	1
Waste Category:	Waste oil and mixed oil
Disposal Method:	R01
Tons:	.3753

FRANK A LOGOLUSO FARMS (Continued) **S103644753**

Facility County: Fresno

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4 AES MENDOTA **RCRA-SQG** **1000191755**
400 GUILLEN PARKWAY **FINDS** **CAD982397606**
MENDOTA, CA 93640 **WMUDS/SWAT**
WDS
SLIC
CUPA Listings
AST
ENF
HAZNET
EMI

RCRA-SQG:

Date form received by agency:	09/01/1996
Facility name:	MENDOTA BIOMASS POWER
Facility address:	400 GUILLEN PKWY MENDOTA, CA 93640
EPA ID:	CAD982397606
Mailing address:	PO BOX 99 MENDOTA, CA 93640
Contact:	Not reported
Contact address:	Not reported Not reported
Contact country:	Not reported
Contact telephone:	Not reported
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	THERMO-ELECTRON
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

AES MENDOTA (Continued) **1000191755**

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Historical Generators:

Date form received by agency:	04/24/1990
Facility name:	MENDOTA BIOMASS POWER
Classification:	Large Quantity Generator
Violation Status:	No violations found

FINDS:

Registry ID: 110000524077

Environmental Interest/Information System
Not reported

AFS (Aerometric Information Retrieval System (AIRS) Facility Subsystem) replaces the former Compliance Data System (CDS), the National Emission Data System (NEDS), and the Storage and Retrieval of Aerometric Data (SAROAD). AIRS is the national repository for information concerning airborne pollution in the United States. AFS is used to track emissions and compliance data from industrial plants. AFS data are utilized by states to prepare State Implementation Plans to comply with regulatory programs and by EPA as an input for the estimation of total national emissions. AFS is undergoing a major redesign to support facility operating permits required under Title V of the Clean Air Act.

The NEI (National Emissions Inventory) database contains information on stationary and mobile sources that emit criteria air pollutants and their precursors, as well as hazardous air pollutants (HAPs).

US Emissions & Generation Resource Database (EGRID) contains data on emissions and resource mix for virtually every power plant and company that generates electricity in the United States.

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

AES MENDOTA (Continued) **1000191755**

US EPA Risk Management Plan (RMP) database stores the risk management plans reported by companies that handle, manufacture, use, or store certain flammable or toxic substances, as required under section 112(r) of the Clean Air Act (CAA).

WMUDS/SWAT:

Edit Date:	Not reported
Complexity:	Category B - Any facility having a physical, chemical, or biological waste treatment system (except for septic systems with subsurface disposal), or any Class II or III disposal site, or facilities without treatment systems that are complex, such as marinas with petroleum products, solid wastes, and sewage pump out facilities.
Primary Waste:	Process Waste (Waste produced as part of the industrial/manufacturing process)
Primary Waste Type:	Designated/Influent or Solid Wastes that pose a significant threat to water quality because of their high concentrations (E.G., BOD, Hardness, TRF, Chloride). 'Manageable' hazardous wastes (E.G., inorganic salts and heavy metals) are included in this category.
Secondary Waste:	Not reported
Secondary Waste Type:	Not reported
Base Meridian:	Not reported
NPID:	Not reported
Tonnage:	0
Regional Board ID:	Not reported
Municipal Solid Waste:	False
Superorder:	False
Open To Public:	False
Waste List:	False
Agency Type:	Private
Agency Name:	MENDOTA BIOMASS POWER, LTD
Agency Department:	Not reported
Agency Address:	PO BOX 99
Agency City,St,Zip:	MENDOTA CA 93640
Agency Contact:	GLENN SIZEMORE
Agency Telephone:	5596554921
Land Owner Name:	Not reported
Land Owner Address:	Not reported
Land Owner City,St,Zip:	Not reported
Land Owner Contact:	Not reported
Land Owner Phone:	Not reported
Region:	5F
Facility Type:	Industrial - Facility that treats and/or disposes of liquid or semisolid wastes from any servicing, producing, manufacturing or processing operation of whatever nature, including mining, gravel washing, geothermal operations, air conditioning, ship building and repairing, oil production, storage and disposal operations, water pumping.
Facility Description:	Not reported
Facility Telephone:	Not reported
SWAT Facility Name:	Not reported
Primary SIC:	4931
Secondary SIC:	Not reported
Comments:	Not reported
Last Facility Editors:	Not reported
Waste Discharge System:	True
Solid Waste Assessment Test Program:	False

AES MENDOTA (Continued) **1000191755**

Toxic Pits Cleanup Act Program:	False
Resource Conservation Recovery Act:	False
Department of Defence:	False
Solid Waste Assessment Test Program:	Not reported
Threat to Water Quality:	Moderate Threat to Water Quality. A violation could have a major adverse impact on receiving biota, can cause aesthetic impairment to a significant human population, or render unusable a potential domestic or municipal water supply. Awsthetic impairment would include nuisance from a waste treatment facility.
Sub Chapter 15:	True
Regional Board Project Officer:	ESB
Number of WMUDS at Facility:	1
Section Range:	Not reported
RCRA Facility:	No
Waste Discharge Requirements:	Active - Any facility with a continuous or seasonal discharge that is under Waste Discharge Requirements.
Self-Monitoring Rept. Frequency:	Monthly Submittal
Waste Discharge System ID:	5D100137001
Solid Waste Information ID:	Not reported

CA WDS:

Facility ID:	Tulare Lake 100137001
Facility Type:	Industrial - Facility that treats and/or disposes of liquid or semisolid wastes from any servicing, producing, manufacturing or processing operation of whatever nature, including mining, gravel washing, geothermal operations, air conditioning, ship building and repairing, oil production, storage and disposal operations, water pumping.
Facility Status:	Active - Any facility with a continuous or seasonal discharge that is under Waste Discharge Requirements.
NPDES Number:	Not reported
Subregion:	0
Facility Telephone:	Not reported
Facility Contact:	DOUG TOMISON
Agency Name:	AES MENDOTA INC
Agency Address:	PO BOX 99
Agency City,St,Zip:	MENDOTA 93640
Agency Contact:	GLENN SIZEMORE
Agency Telephone:	Not reported
Agency Type:	Private
SIC Code:	4931
SIC Code 2:	Not reported
Primary Waste:	Process Waste (Waste produced as part of the industrial/manufacturing process)
Primary Waste Type:	Designated/Influent or Solid Wastes that pose a significant threat to water quality because of their high concentrations (E.G., BOD, Hardness, TRF, Chloride). 'Manageable' hazardous wastes (E.G., inorganic salts and heavy metals) are included in this category.
Secondary Waste:	Not reported
Secondary Waste Type:	Not reported
Design Flow:	0
Baseline Flow:	0
Reclamation:	No reclamation requirements associated with this facility.
POTW:	The facility is not a POTW.
Treat To Water:	Moderate Threat to Water Quality. A violation could have a major adverse impact on receiving biota, can cause aesthetic impairment to a significant human population, or render unusable a potential domestic

AES MENDOTA (Continued) **1000191755**

or municipal water supply. Awsthetic impairment would include nuisance from a waste treatment facility.

Complexity: Category B - Any facility having a physical, chemical, or biological waste treatment system (except for septic systems with subsurface disposal), or any Class II or III disposal site, or facilities without treatment systems that are complex, such as marinas with petroleum products, solid wastes, and sewage pump out facilities.

SLIC:

Region:	STATE
Facility Status:	**Open - Site Assessment**
Status Date:	04/20/2010
Global Id:	SLT5FS604625
Lead Agency:	CENTRAL VALLEY RWQCB (REGION 5F)
Lead Agency Case Number:	Not reported
Latitude:	36.7548
Longitude:	-120.379
Case Type:	Cleanup Program Site
Case Worker:	GJI
Local Agency:	Not reported
RB Case Number:	SLT5FS060
File Location:	Not reported
Potential Media Affected:	Not reported
Potential Contaminants of Concern:	Not reported
Site History:	The case was opened following an unauthorized release from an underground storage tank system at the subject site. Corrective action is underway as directed by the CVRWQCB. Corrective action may consist of preliminary site investigation, planning and implementation of remedial action, verification monitoring, or a combination thereof. A summary of the site history is available by clicking on either the "Cleanup Status History", "Regulatory Activities" or the "Site Maps/Documents" tab. For a complete site history the case file at the CVRWQCB should be consulted.

Click here to access the California GeoTracker records for this facility:

CUPA FRESNO:

Region:	FRESNO
Cross Street:	BELMONT ALLIGNMENT
Facility ID:	FA0271781
APM Number:	013-030-61S
Owner Name:	COVANTA MENDOTA LP
Program Element:	LARGE HAZARDOUS MATERIALS HANDLER

Region:	FRESNO
Cross Street:	BELMONT ALLIGNMENT
Facility ID:	FA0271781
APM Number:	013-030-61S
Owner Name:	COVANTA MENDOTA LP
Program Element:	CONTAMINATED SITE - MISC/RWQCB LEAD

Region:	FRESNO
Cross Street:	BELMONT ALLIGNMENT
Facility ID:	FA0271781
APM Number:	013-030-61S
Owner Name:	COVANTA MENDOTA LP

AES MENDOTA (Continued) **1000191755**

Program Element: EXTREMELY HAZARDOUS SUBSTANCE HANDLER (EPCRA)

Region: FRESNO
Cross Street: BELMONT ALLIGNMENT
Facility ID: FA0271781
APM Number: 013-030-61S
Owner Name: COVANTA MENDOTA LP
Program Element: AST STORAGE CAPACITY 1,320 TO 9,999 GAL

Region: FRESNO
Cross Street: BELMONT ALLIGNMENT
Facility ID: FA0271781
APM Number: 013-030-61S
Owner Name: COVANTA MENDOTA LP
Program Element: HAZARDOUS WASTE GENERATOR (LQG)

Region: FRESNO
Cross Street: BELMONT ALLIGNMENT
Facility ID: FA0271781
APM Number: 013-030-61S
Owner Name: COVANTA MENDOTA LP
Program Element: CALARP RMP FACILITY

AST:
Owner: COVANTA MENDOTA LP
Total Gallons: 1,320
Certified Unified Program Agencies: Fresno

ENF:
Region: 5F
Facility Id: 204599
Agency Name: AES MENDOTA, INC
Place Type: Facility
Place Subtype: Not reported
Facility Type: Industrial
Agency Type: Privately-Owned Business
Of Agencies: 1
Place Latitude: Not reported
Place Longitude: Not reported
SIC Code 1: 4931
SIC Desc 1: Electric and Other Services Combined
SIC Code 2: Not reported
SIC Desc 2: Not reported
SIC Code 3: Not reported
SIC Desc 3: Not reported
NAICS Code 1: Not reported
NAICS Desc 1: Not reported
NAICS Code 2: Not reported
NAICS Desc 2: Not reported
NAICS Code 3: Not reported
NAICS Desc 3: Not reported
Of Places: 1
Source Of Facility: Reg Meas
Design Flow: 7.00000000
Threat To Water Quality: 2
Complexity: B

AES MENDOTA (Continued) **1000191755**

Pretreatment:	X - Facility is not a POTW
Facility Waste Type:	Designated process waste
Facility Waste Type 2:	Not reported
Facility Waste Type 3:	Not reported
Facility Waste Type 4:	Not reported
Program:	LNDISP
# Of Programs:	1
WDID:	5D100137001
Reg Measure Id:	146331
Reg Measure Type:	WDR
Region:	5F
Order #:	97-135
Npdes# CA#:	Not reported
Major-Minor:	Not reported
Npdes Type:	Not reported
Reclamation:	N - No
Dredge Fill Fee:	Not reported
301H:	Not reported
Application Fee Amt Received:	Not reported
Status:	Active
Status Date:	03/02/2010
Effective Date:	06/20/1997
Expiration/Review Date:	06/18/2007
Termination Date:	Not reported
WDR Review - Amend:	Not reported
WDR Review - Revise/Renew:	Not reported
WDR Review - Rescind:	Not reported
WDR Review - No Action Required:	Not reported
WDR Review - Pending:	Not reported
WDR Review - Planned:	Not reported
Status Enrollee:	N
Individual/General:	I
Fee Code:	59 - Land Disposal Site not paying tipping fee
Direction/Voice:	Passive
Enforcement Id(EID):	252598
Region:	5F
Order / Resolution Number:	Not reported
Enforcement Action Type:	Notice of Violation
Effective Date:	04/12/2004
Adoption/Issuance Date:	Not reported
Achieve Date:	Not reported
Termination Date:	Not reported
ACL Issuance Date:	Not reported
EPL Issuance Date:	Not reported
Status:	Historical
Title:	NOV 04/12/2004 for AES Mendota Covanta Mendota LP
Description:	NOV issued for numerous vilolations of the WDRs...freeboard level less than 2 feet, primary liner leaking, and unautorized discharge to land from sprayer.
Program:	LNDISP
Latest Milestone Completion Date:	Not reported
# Of Programs1:	1
Total Assessment Amount:	0
Initial Assessed Amount:	0
Liability $ Amount:	0
Project $ Amount:	0
Liability $ Paid:	0

AES MENDOTA (Continued) **1000191755**

Project $ Completed:	0
Total $ Paid/Completed Amount:	0
Region:	5F
Facility Id:	204599
Agency Name:	AES MENDOTA, INC
Place Type:	Facility
Place Subtype:	Not reported
Facility Type:	Industrial
Agency Type:	Privately-Owned Business
# Of Agencies:	1
Place Latitude:	Not reported
Place Longitude:	Not reported
SIC Code 1:	4931
SIC Desc 1:	Electric and Other Services Combined
SIC Code 2:	Not reported
SIC Desc 2:	Not reported
SIC Code 3:	Not reported
SIC Desc 3:	Not reported
NAICS Code 1:	Not reported
NAICS Desc 1:	Not reported
NAICS Code 2:	Not reported
NAICS Desc 2:	Not reported
NAICS Code 3:	Not reported
NAICS Desc 3:	Not reported
# Of Places:	1
Source Of Facility:	Reg Meas
Design Flow:	7.00000000
Threat To Water Quality:	2
Complexity:	B
Pretreatment:	X - Facility is not a POTW
Facility Waste Type:	Designated process waste
Facility Waste Type 2:	Not reported
Facility Waste Type 3:	Not reported
Facility Waste Type 4:	Not reported
Program:	LNDISP
# Of Programs:	1
WDID:	5D100137001
Reg Measure Id:	146331
Reg Measure Type:	WDR
Region:	5F
Order #:	97-135
Npdes# CA#:	Not reported
Major-Minor:	Not reported
Npdes Type:	Not reported
Reclamation:	N - No
Dredge Fill Fee:	Not reported
301H:	Not reported
Application Fee Amt Received:	Not reported
Status:	Active
Status Date:	03/02/2010
Effective Date:	06/20/1997
Expiration/Review Date:	06/18/2007
Termination Date:	Not reported
WDR Review - Amend:	Not reported
WDR Review - Revise/Renew:	Not reported
WDR Review - Rescind:	Not reported

AES MENDOTA (Continued) **1000191755**

WDR Review - No Action Required:	Not reported
WDR Review - Pending:	Not reported
WDR Review - Planned:	Not reported
Status Enrollee:	N
Individual/General:	I
Fee Code:	59 - Land Disposal Site not paying tipping fee
Direction/Voice:	Passive
Enforcement Id(EID):	229976
Region:	5F
Order / Resolution Number:	UNKNOWN
Enforcement Action Type:	Notice of Violation
Effective Date:	09/15/2000
Adoption/Issuance Date:	Not reported
Achieve Date:	Not reported
Termination Date:	09/15/2000
ACL Issuance Date:	Not reported
EPL Issuance Date:	Not reported
Status:	Historical
Title:	Enforcement - 5D100137001
Description:	NOV ON 8/24/2000 REPORT "WORKPLAN TO ADDRESS NOV 6/26/00 BY GEOLOGICAL TECHNICS, INC" REQUESTING ADDITIONAL DOCUMENTATION FOR CONCRETE COVE
Program:	LNDISP
Latest Milestone Completion Date:	Not reported
# Of Programs1:	1
Total Assessment Amount:	0
Initial Assessed Amount:	0
Liability $ Amount:	0
Project $ Amount:	0
Liability $ Paid:	0
Project $ Completed:	0
Total $ Paid/Completed Amount:	0

Region:	5F
Facility Id:	204599
Agency Name:	AES MENDOTA, INC
Place Type:	Facility
Place Subtype:	Not reported
Facility Type:	Industrial
Agency Type:	Privately-Owned Business
# Of Agencies:	1
Place Latitude:	Not reported
Place Longitude:	Not reported
SIC Code 1:	4931
SIC Desc 1:	Electric and Other Services Combined
SIC Code 2:	Not reported
SIC Desc 2:	Not reported
SIC Code 3:	Not reported
SIC Desc 3:	Not reported
NAICS Code 1:	Not reported
NAICS Desc 1:	Not reported
NAICS Code 2:	Not reported
NAICS Desc 2:	Not reported
NAICS Code 3:	Not reported
NAICS Desc 3:	Not reported
# Of Places:	1
Source Of Facility:	Reg Meas
Design Flow:	7.00000000

AES MENDOTA (Continued) **1000191755**

Threat To Water Quality:	2
Complexity:	B
Pretreatment:	X - Facility is not a POTW
Facility Waste Type:	Designated process waste
Facility Waste Type 2:	Not reported
Facility Waste Type 3:	Not reported
Facility Waste Type 4:	Not reported
Program:	LNDISP
# Of Programs:	1
WDID:	5D100137001
Reg Measure Id:	146331
Reg Measure Type:	WDR
Region:	5F
Order #:	97-135
Npdes# CA#:	Not reported
Major-Minor:	Not reported
Npdes Type:	Not reported
Reclamation:	N - No
Dredge Fill Fee:	Not reported
301H:	Not reported
Application Fee Amt Received:	Not reported
Status:	Active
Status Date:	03/02/2010
Effective Date:	06/20/1997
Expiration/Review Date:	06/18/2007
Termination Date:	Not reported
WDR Review - Amend:	Not reported
WDR Review - Revise/Renew:	Not reported
WDR Review - Rescind:	Not reported
WDR Review - No Action Required:	Not reported
WDR Review - Pending:	Not reported
WDR Review - Planned:	Not reported
Status Enrollee:	N
Individual/General:	I
Fee Code:	59 - Land Disposal Site not paying tipping fee
Direction/Voice:	Passive
Enforcement Id(EID):	229488
Region:	5F
Order / Resolution Number:	UNKNOWN
Enforcement Action Type:	Notice of Violation
Effective Date:	06/26/2000
Adoption/Issuance Date:	Not reported
Achieve Date:	9/15/2000
Termination Date:	06/26/2000
ACL Issuance Date:	Not reported
EPL Issuance Date:	Not reported
Status:	Historical
Title:	Enforcement - 5D100137001
Description:	Since June 1999, electrical conductance, total dissolved solids, chloride, and sulfate concentrations in a downgradient well (MW-2) have increased (doubled) to above background levels. This violates sections A.2, B.2 and B.6 of the WDRs.
Program:	LNDISP
Latest Milestone Completion Date:	09/15/2000
# Of Programs1:	1
Total Assessment Amount:	0
Initial Assessed Amount:	0

AES MENDOTA (Continued) **1000191755**

Liability $ Amount:	0
Project $ Amount:	0
Liability $ Paid:	0
Project $ Completed:	0
Total $ Paid/Completed Amount:	0
Region:	5F
Facility Id:	204599
Agency Name:	AES MENDOTA, INC
Place Type:	Facility
Place Subtype:	Not reported
Facility Type:	Industrial
Agency Type:	Privately-Owned Business
# Of Agencies:	1
Place Latitude:	Not reported
Place Longitude:	Not reported
SIC Code 1:	4931
SIC Desc 1:	Electric and Other Services Combined
SIC Code 2:	Not reported
SIC Desc 2:	Not reported
SIC Code 3:	Not reported
SIC Desc 3:	Not reported
NAICS Code 1:	Not reported
NAICS Desc 1:	Not reported
NAICS Code 2:	Not reported
NAICS Desc 2:	Not reported
NAICS Code 3:	Not reported
NAICS Desc 3:	Not reported
# Of Places:	1
Source Of Facility:	Reg Meas
Design Flow:	7.00000000
Threat To Water Quality:	2
Complexity:	B
Pretreatment:	X - Facility is not a POTW
Facility Waste Type:	Designated process waste
Facility Waste Type 2:	Not reported
Facility Waste Type 3:	Not reported
Facility Waste Type 4:	Not reported
Program:	LNDISP
# Of Programs:	1
WDID:	5D100137001
Reg Measure Id:	146331
Reg Measure Type:	WDR
Region:	5F
Order #:	97-135
Npdes# CA#:	Not reported
Major-Minor:	Not reported
Npdes Type:	Not reported
Reclamation:	N - No
Dredge Fill Fee:	Not reported
301H:	Not reported
Application Fee Amt Received:	Not reported
Status:	Active
Status Date:	03/02/2010
Effective Date:	06/20/1997
Expiration/Review Date:	06/18/2007
Termination Date:	Not reported

AES MENDOTA (Continued) **1000191755**

WDR Review - Amend:	Not reported
WDR Review - Revise/Renew:	Not reported
WDR Review - Rescind:	Not reported
WDR Review - No Action Required:	Not reported
WDR Review - Pending:	Not reported
WDR Review - Planned:	Not reported
Status Enrollee:	N
Individual/General:	I
Fee Code:	59 - Land Disposal Site not paying tipping fee
Direction/Voice:	Passive
Enforcement Id(EID):	228786
Region:	5F
Order / Resolution Number:	UNKNOWN
Enforcement Action Type:	Notice of Violation
Effective Date:	06/12/2000
Adoption/Issuance Date:	Not reported
Achieve Date:	9/15/2000
Termination Date:	06/12/2000
ACL Issuance Date:	Not reported
EPL Issuance Date:	Not reported
Status:	Historical
Title:	Enforcement - 5D100137001
Description:	There were five violations of the WDR Order No. 97-135.
Program:	LNDISP
Latest Milestone Completion Date:	09/15/2000
# Of Programs1:	1
Total Assessment Amount:	0
Initial Assessed Amount:	0
Liability $ Amount:	0
Project $ Amount:	0
Liability $ Paid:	0
Project $ Completed:	0
Total $ Paid/Completed Amount:	0

HAZNET:

Year:	2000
Gepaid:	CAD982397606
Contact:	MENDOTA BIOMASS POWER
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	PO BOX 99
Mailing City,St,Zip:	MENDOTA, CA 936400099
Gen County:	Fresno
TSD EPA ID:	CAD980673842
TSD County:	Fresno
Waste Category:	Waste oil and mixed oil
Disposal Method:	R01
Tons:	1.2718
Facility County:	Fresno

Year:	1999
Gepaid:	CAD982397606
Contact:	MENDOTA BIOMASS POWER
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	PO BOX 99
Mailing City,St,Zip:	MENDOTA, CA 936400099

AES MENDOTA (Continued) **1000191755**

Gen County: Fresno
TSD EPA ID: CAD980673842
TSD County: Fresno
Waste Category: Waste oil and mixed oil
Disposal Method: R01
Tons: 0.3336
Facility County: Fresno

Year: 1999
Gepaid: CAD982397606
Contact: MENDOTA BIOMASS POWER
Telephone: 0000000000
Mailing Name: Not reported
Mailing Address: PO BOX 99
Mailing City,St,Zip: MENDOTA, CA 936400099
Gen County: Fresno
TSD EPA ID: CAD093459485
TSD County: Fresno
Waste Category: Aqueous solution with total organic residues less than 10 percent
Disposal Method: T01
Tons: 0.6545
Facility County: Fresno

Year: 1999
Gepaid: CAD982397606
Contact: MENDOTA BIOMASS POWER
Telephone: 0000000000
Mailing Name: Not reported
Mailing Address: PO BOX 99
Mailing City,St,Zip: MENDOTA, CA 936400099
Gen County: Fresno
TSD EPA ID: CAD066113465
TSD County: Fresno
Waste Category: Liquids with halogenated organic compounds >= 1,000 Mg./L
Disposal Method: H01
Tons: 0.1328
Facility County: Fresno

Year: 1999
Gepaid: CAD982397606
Contact: MENDOTA BIOMASS POWER
Telephone: 0000000000
Mailing Name: Not reported
Mailing Address: PO BOX 99
Mailing City,St,Zip: MENDOTA, CA 936400099
Gen County: Fresno
TSD EPA ID: CAD066113465
TSD County: Fresno
Waste Category: Hydrocarbon solvents (benzene, hexane, Stoddard, Etc.)
Disposal Method: H01
Tons: 0.0417
Facility County: Fresno

Click this hyperlink while viewing on your computer to access
16 additional CA_HAZNET: record(s) in the EDR Site Report.

AES MENDOTA (Continued) **1000191755**

EMI:

Year:	1990
County Code:	10
Air Basin:	SJV
Facility ID:	132
Air District Name:	SJU
SIC Code:	4911
Air District Name:	SAN JOAQUIN VALLEY UNIFIED APCD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	1
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	5
NOX - Oxides of Nitrogen Tons/Yr:	18
SOX - Oxides of Sulphur Tons/Yr:	1
Particulate Matter Tons/Yr:	4
Part. Matter 10 Micrometers & Smllr Tons/Yr:	4

Year:	1995
County Code:	10
Air Basin:	SJV
Facility ID:	825
Air District Name:	SJU
SIC Code:	4911
Air District Name:	SAN JOAQUIN VALLEY UNIFIED APCD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	1
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	5
NOX - Oxides of Nitrogen Tons/Yr:	74
SOX - Oxides of Sulphur Tons/Yr:	12
Particulate Matter Tons/Yr:	4
Part. Matter 10 Micrometers & Smllr Tons/Yr:	4

Year:	1996
County Code:	10
Air Basin:	SJV
Facility ID:	825
Air District Name:	SJU
SIC Code:	4911
Air District Name:	SAN JOAQUIN VALLEY UNIFIED APCD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	7
NOX - Oxides of Nitrogen Tons/Yr:	176
SOX - Oxides of Sulphur Tons/Yr:	7
Particulate Matter Tons/Yr:	23
Part. Matter 10 Micrometers & Smllr Tons/Yr:	23

Year:	1997
County Code:	10
Air Basin:	SJV
Facility ID:	825
Air District Name:	SJU

AES MENDOTA (Continued) **1000191755**

SIC Code:	4911
Air District Name:	SAN JOAQUIN VALLEY UNIFIED APCD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	7
NOX - Oxides of Nitrogen Tons/Yr:	176
SOX - Oxides of Sulphur Tons/Yr:	7
Particulate Matter Tons/Yr:	23
Part. Matter 10 Micrometers & Smllr Tons/Yr:	23

Year:	1998
County Code:	10
Air Basin:	SJV
Facility ID:	825
Air District Name:	SJU
SIC Code:	4911
Air District Name:	SAN JOAQUIN VALLEY UNIFIED APCD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	1
NOX - Oxides of Nitrogen Tons/Yr:	89
SOX - Oxides of Sulphur Tons/Yr:	7
Particulate Matter Tons/Yr:	24
Part. Matter 10 Micrometers & Smllr Tons/Yr:	10

Year:	1999
County Code:	10
Air Basin:	SJV
Facility ID:	825
Air District Name:	SJU
SIC Code:	4911
Air District Name:	SAN JOAQUIN VALLEY UNIFIED APCD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	1
NOX - Oxides of Nitrogen Tons/Yr:	89
SOX - Oxides of Sulphur Tons/Yr:	7
Particulate Matter Tons/Yr:	24
Part. Matter 10 Micrometers & Smllr Tons/Yr:	10

Year:	2000
County Code:	10
Air Basin:	SJV
Facility ID:	825
Air District Name:	SJU
SIC Code:	4911
Air District Name:	SAN JOAQUIN VALLEY UNIFIED APCD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0

AES MENDOTA (Continued) **1000191755**

Carbon Monoxide Emissions Tons/Yr:	1
NOX - Oxides of Nitrogen Tons/Yr:	83
SOX - Oxides of Sulphur Tons/Yr:	7
Particulate Matter Tons/Yr:	22
Part. Matter 10 Micrometers & Smllr Tons/Yr:	9

Year:	2001
County Code:	10
Air Basin:	SJV
Facility ID:	825
Air District Name:	SJU
SIC Code:	4911
Air District Name:	SAN JOAQUIN VALLEY UNIFIED APCD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	1
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	2002
County Code:	10
Air Basin:	SJV
Facility ID:	825
Air District Name:	SJU
SIC Code:	4911
Air District Name:	SAN JOAQUIN VALLEY UNIFIED APCD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	50
NOX - Oxides of Nitrogen Tons/Yr:	86
SOX - Oxides of Sulphur Tons/Yr:	26
Particulate Matter Tons/Yr:	52
Part. Matter 10 Micrometers & Smllr Tons/Yr:	52

Year:	2003
County Code:	10
Air Basin:	SJV
Facility ID:	825
Air District Name:	SJU
SIC Code:	4911
Air District Name:	SAN JOAQUIN VALLEY UNIFIED APCD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	62
NOX - Oxides of Nitrogen Tons/Yr:	83
SOX - Oxides of Sulphur Tons/Yr:	31
Particulate Matter Tons/Yr:	77
Part. Matter 10 Micrometers & Smllr Tons/Yr:	71

AES MENDOTA (Continued) **1000191755**

Year:	2004
County Code:	10
Air Basin:	SJV
Facility ID:	825
Air District Name:	SJU
SIC Code:	4911
Air District Name:	SAN JOAQUIN VALLEY UNIFIED APCD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0.276114422
Reactive Organic Gases Tons/Yr:	0.12177605
Carbon Monoxide Emissions Tons/Yr:	55.73815284
NOX - Oxides of Nitrogen Tons/Yr:	75.48011792
SOX - Oxides of Sulphur Tons/Yr:	27.9003685
Particulate Matter Tons/Yr:	68.72582068
Part. Matter 10 Micrometers & Smllr Tons/Yr:	63.89397491

Year:	2005
County Code:	10
Air Basin:	SJV
Facility ID:	825
Air District Name:	SJU
SIC Code:	4911
Air District Name:	SAN JOAQUIN VALLEY UNIFIED APCD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	.2345698687225337741
Reactive Organic Gases Tons/Yr:	.1042701997248530028
Carbon Monoxide Emissions Tons/Yr:	51.96744619305074169
NOX - Oxides of Nitrogen Tons/Yr:	69.85207737469226256
SOX - Oxides of Sulphur Tons/Yr:	26.1267281000302732
Particulate Matter Tons/Yr:	64.18002994927866003
Part. Matter 10 Micrometers & Smllr Tons/Yr:	59.71721785946688412

Year:	2006
County Code:	10
Air Basin:	SJV
Facility ID:	825
Air District Name:	SJU
SIC Code:	4911
Air District Name:	SAN JOAQUIN VALLEY UNIFIED APCD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	.2715960105555591717
Reactive Organic Gases Tons/Yr:	.1220018361385613667
Carbon Monoxide Emissions Tons/Yr:	60.1928263620197769
NOX - Oxides of Nitrogen Tons/Yr:	80.86750666298329347
SOX - Oxides of Sulphur Tons/Yr:	30.26499244974881405
Particulate Matter Tons/Yr:	75.29595526847092773
Part. Matter 10 Micrometers & Smllr Tons/Yr:	69.74724560940672398

Year:	2007
County Code:	10
Air Basin:	SJV
Facility ID:	825
Air District Name:	SJU
SIC Code:	4911

AES MENDOTA (Continued) **1000191755**

Air District Name:	SAN JOAQUIN VALLEY UNIFIED APCD
Community Health Air Pollution Info System:	Y
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	.2367910684810350593
Reactive Organic Gases Tons/Yr:	.1045024150999560645
Carbon Monoxide Emissions Tons/Yr:	58.36940225311964723
NOX - Oxides of Nitrogen Tons/Yr:	77.90412926190018612
SOX - Oxides of Sulphur Tons/Yr:	29.47646494990810751
Particulate Matter Tons/Yr:	75.30802889770689987
Part. Matter 10 Micrometers & Smllr Tons/Yr:	69.13831059024175644

Year:	2007
County Code:	10
Air Basin:	SJV
Facility ID:	825
Air District Name:	SJU
SIC Code:	4911
Air District Name:	SAN JOAQUIN VALLEY UNIFIED APCD
Community Health Air Pollution Info System:	Y
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	.2555474599032630680
Reactive Organic Gases Tons/Yr:	.1169080102593750096
Carbon Monoxide Emissions Tons/Yr:	60.94248887153267912
NOX - Oxides of Nitrogen Tons/Yr:	81.35514172959387212
SOX - Oxides of Sulphur Tons/Yr:	30.77307991488784551
Particulate Matter Tons/Yr:	75.21064274262712088
Part. Matter 10 Micrometers & Smllr Tons/Yr:	70.10691789553342343

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5 **MENDOTA JUNIOR HIGH SCHOOL SITE** **SCH** **S107736720**
1200 BELMONT AVENUE **ENVIROSTOR** **N/A**
MENDOTA, CA 93640

SCH:

Facility ID:	70000137
Site Type:	School Investigation
Site Type Detail:	School
Site Mgmt. Req.:	NONE SPECIFIED
Acres:	23
National Priorities List:	NO
Cleanup Oversight Agencies:	SMBRP
Lead Agency:	SMBRP
Lead Agency Description:	DTSC - Site Mitigation And Brownfield Reuse Program
Project Manager:	Not reported
Supervisor:	Javier Hinojosa
Division Branch:	Northern California Schools & Santa Susana
Site Code:	104514
Assembly:	31
Senate:	16
Special Program Status:	EPA - Target Site Investigation
Status:	No Further Action
Status Date:	05/22/2006
Restricted Use:	NO
Funding:	EPA Grant
Latitude:	36.7475
Longitude:	-120.3812
APN:	019-06-103
Past Use:	AGRICULTURAL - ROW CROPS

MENDOTA JUNIOR HIGH SCHOOL SITE (Continued) **S107736720**

Potential COC:	30181, 30440
Confirmed COC:	NONE SPECIFIED
Potential Description:	IA, SOIL, SV
Alias Name:	019-06-103
Alias Type:	APN
Alias Name:	104514
Alias Type:	Project Code (Site Code)
Alias Name:	70000122
Alias Type:	Envirostor ID Number
Alias Name:	70000137
Alias Type:	Envirostor ID Number

Completed Info:

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Preliminary Endangerment Assessment Workplan
Completed Date:	2006-02-24 00:00:00
Comments:	Not reported

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Preliminary Endangerment Assessment Report
Completed Date:	2006-05-22 00:00:00
Comments:	Approval of final PEA report.

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Cost Recovery Closeout Memo
Completed Date:	2006-12-07 00:00:00
Comments:	Not reported

Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported

ENVIROSTOR:

Site Type:	School Investigation
Site Type Detailed:	School
Acres:	23
NPL:	NO
Regulatory Agencies:	SMBRP
Lead Agency:	SMBRP
Program Manager:	Not reported
Supervisor:	Javier Hinojosa
Division Branch:	Northern California Schools & Santa Susana
Facility ID:	70000137
Site Code:	104514
Assembly:	31
Senate:	16
Special Program:	EPA - Target Site Investigation
Status:	No Further Action

MENDOTA JUNIOR HIGH SCHOOL SITE (Continued) **S107736720**

Status Date:	05/22/2006
Restricted Use:	NO
Site Mgmt. Req.:	NONE SPECIFIED
Funding:	EPA Grant
Latitude:	36.7475
Longitude:	-120.3812
APN:	019-06-103
Past Use:	AGRICULTURAL - ROW CROPS
Potential COC:	30181, 30440
Confirmed COC:	NONE SPECIFIED
Potential Description:	IA, SOIL, SV
Alias Name:	019-06-103
Alias Type:	APN
Alias Name:	104514
Alias Type:	Project Code (Site Code)
Alias Name:	70000122
Alias Type:	Envirostor ID Number
Alias Name:	70000137
Alias Type:	Envirostor ID Number

Completed Info:

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Preliminary Endangerment Assessment Workplan
Completed Date:	2006-02-24 00:00:00
Comments:	Not reported
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Preliminary Endangerment Assessment Report
Completed Date:	2006-05-22 00:00:00
Comments:	Approval of final PEA report.
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Cost Recovery Closeout Memo
Completed Date:	2006-12-07 00:00:00
Comments:	Not reported
Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported

Count: 40 records

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
FIREBAUGH	S106953228	CIRCLE G FARMS	I 5 & CALIFORNIA	93622	CUPA Listings
FIREBAUGH	S111212236	EXCAVATION OF SAN JOAQUIN	8TH ST	93622	ENF
FIREBAUGH	U001588158	RAMON ECHEVESTE	1888 8TH ST	93622	HIST UST
FIREBAUGH	S104868555	ECHEVESTE PROPERTY	1888 8TH	93622	CUPA Listings
FIREBAUGH	S106091369	PARAMOUNT FARMING COMPANY	AVE 71 & 2ND	93622	CUPA Listings, HAZNET
FIREBAUGH	S110816237	COLUMBIA CANAL COMPANY	AVE 71 & 2ND	93622	CUPA Listings
FIREBAUGH	S105023760	NEW COLUMBIA RANCH	AVE 71 & 2ND	93622	HIST CORTESE, LUST
FIREBAUGH	S106952945	TRI FARMS/JESS TELLERS	W BELMONT & WASHOE NW CORN	93622	CUPA Listings
FIREBAUGH	S106924720	CLIFF'S EXXON	1307 N HIGHWAY 33	93622	SWEEPS UST
FIREBAUGH	S103650124	SAN LUIS WATER DISTRICT	29315 POLELINE RD	93622	HAZNET
FIREBAUGH	S106926555	GARY & JESS ALLEN GRAIN HARVES	9502 ROAD 5 1-2	93622	SWEEPS UST
FIREBAUGH	S106931161	RAY BALDRIDGE	6353 ROAD 8 1-2	93622	SWEEPS UST
FIREBAUGH	S109457151	SAN JOAQUIN VILLAS	N ST CLYDE FANNON AVE NW	93622	NPDES
KERMAN	S107140968	SAN JOAQUIN VALLEY RAILROAD	APN 023	93630	HAZNET
KERMAN	S109693648	S GOLDENROD AVE ST PROJECT	S GOLDENROD AVENUE OF KEARNEY BLVD N	93630	NPDES
KERMAN	S106927210	HELM BEAN AND SEED	1100 S HWY 145	93630	SWEEPS UST
KERMAN	1003878610	TEXACO INC RAISIN CITY FLD KERMAN	8 MI SO OF	93630	CERC-NFRAP
KERMAN	S106353080	AT&T MOBILITY-SAN JOAQUIN 27316	3449 S STATE	93630	CUPA Listings
MENDOTA	S106922365	ABANDONED READY MIX PLANT	HWY 180	93640	SWEEPS UST
MENDOTA	S106175826	MENDOTA UNIFIED SCHOOL DIST	6TH & WHITESBRIDGE	93640	CUPA Listings
MENDOTA	S106929325	MENDOTA UNION SCHOOL DISTRICT	6TH / WHITBRIDGE RD	93640	SWEEPS UST
MENDOTA	S104870381	SOUTHERN PACIFIC TRANS CO	9TH & RR TRACK	93640	CUPA Listings
MENDOTA	8714861	1/2 S ADAMS AVE & SAN DIEGO AVE	1/2 S ADAMS AVE & SAN DIEGO AVE		ERNS
MENDOTA	S104867298	MENDOTA SOLID WASTE DISPOSAL	BASS	93640	CUPA Listings
MENDOTA	S107257300	MENDOTA TRANSFER STATION	BASS	93640	CUPA Listings
MENDOTA	S106924969	COUNTY OF FRESNO	BASS PARK MENDOTA	93640	SWEEPS UST
MENDOTA	U001589630	SILVER CREEK PACKING CO. SHOP	2158 BASS AVE.	93640	HIST CORTESE, LUST, HIST UST
MENDOTA	S106176374	SILVER CREEK PACKING	2158 BASS AVE	93640	LUST, CUPA Listings
MENDOTA	S100925074	SUMNER PECK RANCH	P.O. BOX 507	93640	Toxic Pits
MENDOTA	S111212868	MENDOTA COIT COTTON RECLAMATION PROJECT	37480 JENSEN	93640	ENF
MENDOTA	S104869947	MCI WORLDCOM-MENDOTA SITE 682	W KAMM & SAN DIEGO N OF	93640	CUPA Listings
MENDOTA	S108277090	VERIZON WIRELESS - WEST KAMM	W KAMM & I 5	93640	CUPA Listings
MENDOTA	S109431296	SAN LUIS & DELTA MENDOTA WATER AUTHORITY	LAT 3676460N LONG 12036868W	93640	HAZNET
MENDOTA	S108536878	JJ AUTO REPAIR	485 W NAPLES	93640	CUPA Listings
MENDOTA	1003877975	MENDOTA SITE	1 MI NE HWY 33	93640	CERC-NFRAP
MENDOTA	1010313866	MENDOTA DISPOSAL SITE	OFF BASS AVE	93640	RCRA-LQG
MENDOTA	S104870859	SAN MATEO RANCH	643 N SAN MATEO	93640	CUPA Listings
MENDOTA	S109148563	WESTERN SUN PRODUCTS	1455 N SAN MATEO RD	93640	CUPA Listings
MENDOTA	S109457946	SEWER INTERCEPTOR PROJECT	STHY 33 BASS AVE	93640	NPDES
MENDOTA	S101480055	SPRECKELS SUGAR COMPANY, INC.	WHITEBRIDGE RD & SAN MATEO	93640	ENVIROSTOR

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Number of Days to Update: Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

FEDERAL RECORDS

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 06/30/2011
Date Data Arrived at EDR: 07/12/2011
Date Made Active in Reports: 09/29/2011
Number of Days to Update: 79

Source: EPA
Telephone: N/A
Last EDR Contact: 10/12/2011
Next Scheduled EDR Contact: 01/23/2012
Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 6
Telephone: 214-655-6659

EPA Region 3
Telephone 215-814-5418

EPA Region 7
Telephone: 913-551-7247

EPA Region 4
Telephone 404-562-8033

EPA Region 8
Telephone: 303-312-6774

EPA Region 5
Telephone 312-886-6686

EPA Region 9
Telephone: 415-947-4246

EPA Region 10
Telephone 206-553-8665

Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 06/30/2011
Date Data Arrived at EDR: 07/12/2011
Date Made Active in Reports: 09/29/2011
Number of Days to Update: 79

Source: EPA
Telephone: N/A
Last EDR Contact: 10/12/2011
Next Scheduled EDR Contact: 01/23/2012
Data Release Frequency: Quarterly

DELISTED NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 06/30/2011
Date Data Arrived at EDR: 07/12/2011
Date Made Active in Reports: 09/29/2011
Number of Days to Update: 79

Source: EPA
Telephone: N/A
Last EDR Contact: 10/12/2011
Next Scheduled EDR Contact: 01/23/2012
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991
Date Data Arrived at EDR: 02/02/1994
Date Made Active in Reports: 03/30/1994
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

CERCLIS: Comprehensive Environmental Response, Compensation, and Liability Information System

CERCLIS contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 02/25/2011
Date Data Arrived at EDR: 03/01/2011
Date Made Active in Reports: 05/02/2011
Number of Days to Update: 62

Source: EPA
Telephone: 703-412-9810
Last EDR Contact: 09/01/2011
Next Scheduled EDR Contact: 12/12/2011
Data Release Frequency: Quarterly

CERCLIS-NFRAP: CERCLIS No Further Remedial Action Planned

Archived sites are sites that have been removed and archived from the inventory of CERCLIS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list this site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. This decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be a potential NPL site.

Date of Government Version: 02/25/2011
Date Data Arrived at EDR: 03/01/2011
Date Made Active in Reports: 05/02/2011
Number of Days to Update: 62

Source: EPA
Telephone: 703-412-9810
Last EDR Contact: 09/01/2011
Next Scheduled EDR Contact: 12/12/2011
Data Release Frequency: Quarterly

LIENS 2: CERCLA Lien Information

A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 09/09/2011
Date Data Arrived at EDR: 09/16/2011
Date Made Active in Reports: 09/29/2011
Number of Days to Update: 13

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 08/12/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: Varies

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 03/09/2011
Date Data Arrived at EDR: 03/15/2011
Date Made Active in Reports: 06/14/2011
Number of Days to Update: 91

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: Quarterly

RCRA-TSDF: RCRA - Treatment, Storage and Disposal

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 06/15/2011
Date Data Arrived at EDR: 07/07/2011
Date Made Active in Reports: 08/08/2011
Number of Days to Update: 32

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 10/05/2011
Next Scheduled EDR Contact: 01/16/2012
Data Release Frequency: Quarterly

RCRA-LQG: RCRA - Large Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 06/15/2011
Date Data Arrived at EDR: 07/07/2011
Date Made Active in Reports: 08/08/2011
Number of Days to Update: 32

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 10/05/2011
Next Scheduled EDR Contact: 01/16/2012
Data Release Frequency: Quarterly

RCRA-SQG: RCRA - Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 06/15/2011
Date Data Arrived at EDR: 07/07/2011
Date Made Active in Reports: 08/08/2011
Number of Days to Update: 32

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 10/05/2011
Next Scheduled EDR Contact: 01/16/2012
Data Release Frequency: Quarterly

RCRA-CESQG: RCRA - Conditionally Exempt Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 06/15/2011
Date Data Arrived at EDR: 07/07/2011
Date Made Active in Reports: 08/08/2011
Number of Days to Update: 32

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 10/05/2011
Next Scheduled EDR Contact: 01/16/2012
Data Release Frequency: Varies

RCRA-NonGen: RCRA - Non Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 06/15/2011
Date Data Arrived at EDR: 07/07/2011
Date Made Active in Reports: 08/08/2011
Number of Days to Update: 32

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 10/05/2011
Next Scheduled EDR Contact: 01/16/2012
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 03/16/2011
Date Data Arrived at EDR: 03/25/2011
Date Made Active in Reports: 06/14/2011
Number of Days to Update: 81

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: Varies

US INST CONTROL: Sites with Institutional Controls

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 03/16/2011
Date Data Arrived at EDR: 03/25/2011
Date Made Active in Reports: 06/14/2011
Number of Days to Update: 81

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: Varies

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 07/05/2011
Date Data Arrived at EDR: 07/05/2011
Date Made Active in Reports: 09/29/2011
Number of Days to Update: 86

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 10/04/2011
Next Scheduled EDR Contact: 01/16/2012
Data Release Frequency: Annually

HMIRS: Hazardous Materials Information Reporting System

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 07/05/2011
Date Data Arrived at EDR: 07/05/2011
Date Made Active in Reports: 09/30/2011
Number of Days to Update: 87

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 10/04/2011
Next Scheduled EDR Contact: 01/16/2012
Data Release Frequency: Annually

DOT OPS: Incident and Accident Data

Department of Transporation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 01/12/2011
Date Data Arrived at EDR: 02/11/2011
Date Made Active in Reports: 05/02/2011
Number of Days to Update: 80

Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 08/09/2011
Next Scheduled EDR Contact: 11/21/2011
Data Release Frequency: Varies

US CDL: Clandestine Drug Labs

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 06/08/2011
Date Data Arrived at EDR: 09/16/2011
Date Made Active in Reports: 09/29/2011
Number of Days to Update: 13

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 09/07/2011
Next Scheduled EDR Contact: 12/19/2011
Data Release Frequency: Quarterly

US BROWNFIELDS: A Listing of Brownfields Sites

Included in the listing are brownfields properties addresses by Cooperative Agreement Recipients and brownfields properties addressed by Targeted Brownfields Assessments. Targeted Brownfields Assessments-EPA's Targeted Brownfields Assessments (TBA) program is designed to help states, tribes, and municipalities--especially those without EPA Brownfields Assessment Demonstration Pilots--minimize the uncertainties of contamination often associated with brownfields. Under the TBA program, EPA provides funding and/or technical assistance for environmental assessments at brownfields sites throughout the country. Targeted Brownfields Assessments supplement and work with other efforts under EPA's Brownfields Initiative to promote cleanup and redevelopment of brownfields. Cooperative Agreement Recipients-States, political subdivisions, territories, and Indian tribes become Brownfields Cleanup Revolving Loan Fund (BCRLF) cooperative agreement recipients when they enter into BCRLF cooperative agreements with the U.S. EPA. EPA selects BCRLF cooperative agreement recipients based on a proposal and application process. BCRLF cooperative agreement recipients must use EPA funds provided through BCRLF cooperative agreement for specified brownfields-related cleanup activities.

Date of Government Version: 06/27/2011
Date Data Arrived at EDR: 06/27/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 78

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 09/28/2011
Next Scheduled EDR Contact: 01/09/2012
Data Release Frequency: Semi-Annually

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 11/10/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 62

Source: USGS
Telephone: 888-275-8747
Last EDR Contact: 10/20/2011
Next Scheduled EDR Contact: 01/30/2012
Data Release Frequency: Semi-Annually

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 12/31/2009
Date Data Arrived at EDR: 08/12/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 112

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: Varies

LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 12/09/2005
Date Data Arrived at EDR: 12/11/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 31

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 07/11/2011
Next Scheduled EDR Contact: 09/05/2011
Data Release Frequency: Varies

CONSENT: Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 06/01/2011
Date Data Arrived at EDR: 08/19/2011
Date Made Active in Reports: 09/29/2011
Number of Days to Update: 41

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 10/03/2011
Next Scheduled EDR Contact: 01/16/2012
Data Release Frequency: Varies

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 07/31/2011
Date Data Arrived at EDR: 09/14/2011
Date Made Active in Reports: 09/29/2011
Number of Days to Update: 15

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 09/14/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: Annually

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 09/14/2010
Date Data Arrived at EDR: 10/21/2010
Date Made Active in Reports: 01/28/2011
Number of Days to Update: 99

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 08/31/2011
Next Scheduled EDR Contact: 12/12/2011
Data Release Frequency: Varies

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations

A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 01/12/2009
Date Data Arrived at EDR: 05/07/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 137

Source: EPA, Region 9
Telephone: 415-947-4219
Last EDR Contact: 09/26/2011
Next Scheduled EDR Contact: 01/09/2012
Data Release Frequency: No Update Planned

ODI: Open Dump Inventory

An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985
Date Data Arrived at EDR: 08/09/2004
Date Made Active in Reports: 09/17/2004
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 800-424-9346
Last EDR Contact: 06/09/2004
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 08/18/2011
Date Data Arrived at EDR: 09/08/2011
Date Made Active in Reports: 09/29/2011
Number of Days to Update: 21

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 09/08/2011
Next Scheduled EDR Contact: 12/19/2011
Data Release Frequency: Semi-Annually

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2009
Date Data Arrived at EDR: 12/17/2010
Date Made Active in Reports: 03/21/2011
Number of Days to Update: 94

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 09/01/2011
Next Scheduled EDR Contact: 12/12/2011
Data Release Frequency: Annually

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2006
Date Data Arrived at EDR: 09/29/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 64

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 09/27/2011
Next Scheduled EDR Contact: 01/09/2012
Data Release Frequency: Every 4 Years

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 08/31/2011
Next Scheduled EDR Contact: 12/12/2011
Data Release Frequency: Quarterly

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 08/31/2011
Next Scheduled EDR Contact: 12/12/2011
Data Release Frequency: Quarterly

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing

A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2007
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing

A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2008
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/2009
Date Data Arrived at EDR: 12/10/2010
Date Made Active in Reports: 02/25/2011
Number of Days to Update: 77

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 08/18/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: Annually

ICIS: Integrated Compliance Information System

The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 01/07/2011
Date Data Arrived at EDR: 01/21/2011
Date Made Active in Reports: 03/21/2011
Number of Days to Update: 59

Source: Environmental Protection Agency
Telephone: 202-564-5088
Last EDR Contact: 09/26/2011
Next Scheduled EDR Contact: 01/09/2012
Data Release Frequency: Quarterly

PADS: PCB Activity Database System

PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 11/01/2010
Date Data Arrived at EDR: 11/10/2010
Date Made Active in Reports: 02/16/2011
Number of Days to Update: 98

Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 10/19/2011
Next Scheduled EDR Contact: 01/30/2012
Data Release Frequency: Annually

MLTS: Material Licensing Tracking System

MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 06/21/2011
Date Data Arrived at EDR: 07/15/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 60

Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: Quarterly

RADINFO: Radiation Information Database

The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 01/11/2011
Date Data Arrived at EDR: 01/13/2011
Date Made Active in Reports: 02/16/2011
Number of Days to Update: 34

Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 10/13/2011
Next Scheduled EDR Contact: 01/23/2012
Data Release Frequency: Quarterly

FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 04/14/2010
Date Data Arrived at EDR: 04/16/2010
Date Made Active in Reports: 05/27/2010
Number of Days to Update: 41

Source: EPA
Telephone: (415) 947-8000
Last EDR Contact: 09/13/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: Quarterly

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 06/02/2008
Next Scheduled EDR Contact: 09/01/2008
Data Release Frequency: No Update Planned

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2009
Date Data Arrived at EDR: 03/01/2011
Date Made Active in Reports: 05/02/2011
Number of Days to Update: 62

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 09/01/2011
Next Scheduled EDR Contact: 12/12/2011
Data Release Frequency: Biennially

FEDERAL FACILITY: Federal Facility Site Information listing

A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPAa??s Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

Date of Government Version: 12/10/2010
Date Data Arrived at EDR: 01/11/2011
Date Made Active in Reports: 02/16/2011
Number of Days to Update: 36

Source: Environmental Protection Agency
Telephone: 703-603-8704
Last EDR Contact: 10/14/2011
Next Scheduled EDR Contact: 01/23/2012
Data Release Frequency: Varies

US HIST CDL: National Clandestine Laboratory Register

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 09/01/2007
Date Data Arrived at EDR: 11/19/2008
Date Made Active in Reports: 03/30/2009
Number of Days to Update: 131

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 03/23/2009
Next Scheduled EDR Contact: 06/22/2009
Data Release Frequency: No Update Planned

PCB TRANSFORMER: PCB Transformer Registration Database
The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 01/01/2008
Date Data Arrived at EDR: 02/18/2009
Date Made Active in Reports: 05/29/2009
Number of Days to Update: 100

Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 10/19/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: Varies

COAL ASH DOE: Sleam-Electric Plan Operation Data
A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 08/07/2009
Date Made Active in Reports: 10/22/2009
Number of Days to Update: 76

Source: Department of Energy
Telephone: 202-586-8719
Last EDR Contact: 10/18/2011
Next Scheduled EDR Contact: 01/30/2012
Data Release Frequency: Varies

FEMA UST: Underground Storage Tank Listing
A listing of all FEMA owned underground storage tanks.

Date of Government Version: 01/01/2010
Date Data Arrived at EDR: 02/16/2010
Date Made Active in Reports: 04/12/2010
Number of Days to Update: 55

Source: FEMA
Telephone: 202-646-5797
Last EDR Contact: 10/17/2011
Next Scheduled EDR Contact: 01/30/2012
Data Release Frequency: Varies

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List
A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 08/17/2010
Date Data Arrived at EDR: 01/03/2011
Date Made Active in Reports: 03/21/2011
Number of Days to Update: 77

Source: Environmental Protection Agency
Telephone: N/A
Last EDR Contact: 09/16/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: Varies

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing
The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 03/07/2011
Date Data Arrived at EDR: 03/09/2011
Date Made Active in Reports: 05/02/2011
Number of Days to Update: 54

Source: Environmental Protection Agency
Telephone: 615-532-8599
Last EDR Contact: 10/24/2011
Next Scheduled EDR Contact: 02/06/2012
Data Release Frequency: Varies

STATE AND LOCAL RECORDS

HIST CAL-SITES: Calsites Database
The Calsites database contains potential or confirmed hazardous substance release properties. In 1996, California EPA reevaluated and significantly reduced the number of sites in the Calsites database. No longer updated by the state agency. It has been replaced by ENVIROSTOR.

Date of Government Version: 08/08/2005
Date Data Arrived at EDR: 08/03/2006
Date Made Active in Reports: 08/24/2006
Number of Days to Update: 21

Source: Department of Toxic Substance Control
Telephone: 916-323-3400
Last EDR Contact: 02/23/2009
Next Scheduled EDR Contact: 05/25/2009
Data Release Frequency: No Update Planned

CA BOND EXP. PLAN: Bond Expenditure Plan

Department of Health Services developed a site-specific expenditure plan as the basis for an appropriation of Hazardous Substance Cleanup Bond Act funds. It is not updated.

Date of Government Version: 01/01/1989
Date Data Arrived at EDR: 07/27/1994
Date Made Active in Reports: 08/02/1994
Number of Days to Update: 6

Source: Department of Health Services
Telephone: 916-255-2118
Last EDR Contact: 05/31/1994
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

SCH: School Property Evaluation Program

This category contains proposed and existing school sites that are being evaluated by DTSC for possible hazardous materials contamination. In some cases, these properties may be listed in the CalSites category depending on the level of threat to public health and safety or the environment they pose.

Date of Government Version: 09/13/2011
Date Data Arrived at EDR: 09/15/2011
Date Made Active in Reports: 10/24/2011
Number of Days to Update: 39

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 09/15/2011
Next Scheduled EDR Contact: 11/21/2011
Data Release Frequency: Quarterly

TOXIC PITS: Toxic Pits Cleanup Act Sites

Toxic PITS Cleanup Act Sites. TOXIC PITS identifies sites suspected of containing hazardous substances where cleanup has not yet been completed.

Date of Government Version: 07/01/1995
Date Data Arrived at EDR: 08/30/1995
Date Made Active in Reports: 09/26/1995
Number of Days to Update: 27

Source: State Water Resources Control Board
Telephone: 916-227-4364
Last EDR Contact: 01/26/2009
Next Scheduled EDR Contact: 04/27/2009
Data Release Frequency: No Update Planned

SWF/LF (SWIS): Solid Waste Information System

Active, Closed and Inactive Landfills. SWF/LF records typically contain an inve ntory of solid waste disposal facilities or landfills. These may be active or i nactive facilities or open dumps that failed to meet RCRA Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 08/22/2011
Date Data Arrived at EDR: 08/24/2011
Date Made Active in Reports: 10/03/2011
Number of Days to Update: 40

Source: Department of Resources Recycling and Recovery
Telephone: 916-341-6320
Last EDR Contact: 08/24/2011
Next Scheduled EDR Contact: 12/05/2011
Data Release Frequency: Quarterly

WMUDS/SWAT: Waste Management Unit Database

Waste Management Unit Database System. WMUDS is used by the State Water Resources Control Board staff and the Regional Water Quality Control Boards for program tracking and inventory of waste management units. WMUDS is composed of the following databases: Facility Information, Scheduled Inspections Information, Waste Management Unit Information, SWAT Program Information, SWAT Report Summary Information, SWAT Report Summary Data, Chapter 15 (formerly Subchapter 15) Information, Chapter 15 Monitoring Parameters, TPCA Program Information, RCRA Program Information, Closure Information, and Interested Parties Information.

Date of Government Version: 04/01/2000
Date Data Arrived at EDR: 04/10/2000
Date Made Active in Reports: 05/10/2000
Number of Days to Update: 30

Source: State Water Resources Control Board
Telephone: 916-227-4448
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

NPDES: NPDES Permits Listing

A listing of NPDES permits, including stormwater.

Date of Government Version: 08/23/2011
Date Data Arrived at EDR: 08/24/2011
Date Made Active in Reports: 10/03/2011
Number of Days to Update: 40

Source: State Water Resources Control Board
Telephone: 916-445-9379
Last EDR Contact: 08/24/2011
Next Scheduled EDR Contact: 12/05/2011
Data Release Frequency: Quarterly

WDS: Waste Discharge System
Sites which have been issued waste discharge requirements.

Date of Government Version: 06/19/2007
Date Data Arrived at EDR: 06/20/2007
Date Made Active in Reports: 06/29/2007
Number of Days to Update: 9

Source: State Water Resources Control Board
Telephone: 916-341-5227
Last EDR Contact: 08/31/2011
Next Scheduled EDR Contact: 12/12/2011
Data Release Frequency: Quarterly

CORTESE: "Cortese" Hazardous Waste & Substances Sites List
The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites). This listing is no longer updated by the state agency.

Date of Government Version: 10/03/2011
Date Data Arrived at EDR: 10/04/2011
Date Made Active in Reports: 10/25/2011
Number of Days to Update: 21

Source: CAL EPA/Office of Emergency Information
Telephone: 916-323-3400
Last EDR Contact: 10/04/2011
Next Scheduled EDR Contact: 01/16/2012
Data Release Frequency: Quarterly

HIST CORTESE: Hazardous Waste & Substance Site List
The sites for the list are designated by the State Water Resource Control Board [LUST], the Integrated Waste Board [SWF/LS], and the Department of Toxic Substances Control [CALSITES].

Date of Government Version: 04/01/2001
Date Data Arrived at EDR: 01/22/2009
Date Made Active in Reports: 04/08/2009
Number of Days to Update: 76

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/22/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

SWRCY: Recycler Database
A listing of recycling facilities in California.

Date of Government Version: 09/08/2011
Date Data Arrived at EDR: 09/20/2011
Date Made Active in Reports: 10/24/2011
Number of Days to Update: 34

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 09/20/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: Quarterly

LUST: Geotracker's Leaking Underground Fuel Tank Report
Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state. For more information on a particular leaking underground storage tank sites, please contact the appropriate regulatory agency.

Date of Government Version: 09/19/2011
Date Data Arrived at EDR: 09/20/2011
Date Made Active in Reports: 10/24/2011
Number of Days to Update: 34

Source: State Water Resources Control Board
Telephone: see region list
Last EDR Contact: 09/20/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: Quarterly

LUST REG 1: Active Toxic Site Investigation
Del Norte, Humboldt, Lake, Mendocino, Modoc, Siskiyou, Sonoma, Trinity counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/01/2001
Date Data Arrived at EDR: 02/28/2001
Date Made Active in Reports: 03/29/2001
Number of Days to Update: 29

Source: California Regional Water Quality Control Board North Coast (1)
Telephone: 707-570-3769
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

LUST REG 2: Fuel Leak List

Leaking Underground Storage Tank locations. Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, Sonoma counties.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: California Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-622-2433
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: Quarterly

LUST REG 3: Leaking Underground Storage Tank Database

Leaking Underground Storage Tank locations. Monterey, San Benito, San Luis Obispo, Santa Barbara, Santa Cruz counties.

Date of Government Version: 05/19/2003
Date Data Arrived at EDR: 05/19/2003
Date Made Active in Reports: 06/02/2003
Number of Days to Update: 14

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-542-4786
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: No Update Planned

LUST REG 9: Leaking Underground Storage Tank Report

Orange, Riverside, San Diego counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 03/01/2001
Date Data Arrived at EDR: 04/23/2001
Date Made Active in Reports: 05/21/2001
Number of Days to Update: 28

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-637-5595
Last EDR Contact: 09/26/2011
Next Scheduled EDR Contact: 01/09/2012
Data Release Frequency: No Update Planned

LUST REG 5: Leaking Underground Storage Tank Database

Leaking Underground Storage Tank locations. Alameda, Alpine, Amador, Butte, Colusa, Contra Costa, Calveras, El Dorado, Fresno, Glenn, Kern, Kings, Lake, Lassen, Madera, Mariposa, Merced, Modoc, Napa, Nevada, Placer, Plumas, Sacramento, San Joaquin, Shasta, Solano, Stanislaus, Sutter, Tehama, Tulare, Tuolumne, Yolo, Yuba counties.

Date of Government Version: 07/01/2008
Date Data Arrived at EDR: 07/22/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 9

Source: California Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-4834
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: Quarterly

LUST REG 6L: Leaking Underground Storage Tank Case Listing

For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/09/2003
Date Data Arrived at EDR: 09/10/2003
Date Made Active in Reports: 10/07/2003
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Lahontan Region (6)
Telephone: 530-542-5572
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

LUST REG 6V: Leaking Underground Storage Tank Case Listing

Leaking Underground Storage Tank locations. Inyo, Kern, Los Angeles, Mono, San Bernardino counties.

Date of Government Version: 06/07/2005
Date Data Arrived at EDR: 06/07/2005
Date Made Active in Reports: 06/29/2005
Number of Days to Update: 22

Source: California Regional Water Quality Control Board Victorville Branch Office (6)
Telephone: 760-241-7365
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

LUST REG 7: Leaking Underground Storage Tank Case Listing
Leaking Underground Storage Tank locations. Imperial, Riverside, San Diego, Santa Barbara counties.

Date of Government Version: 02/26/2004
Date Data Arrived at EDR: 02/26/2004
Date Made Active in Reports: 03/24/2004
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Colorado River Basin Region (7)
Telephone: 760-776-8943
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

LUST REG 8: Leaking Underground Storage Tanks
California Regional Water Quality Control Board Santa Ana Region (8). For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/14/2005
Date Data Arrived at EDR: 02/15/2005
Date Made Active in Reports: 03/28/2005
Number of Days to Update: 41

Source: California Regional Water Quality Control Board Santa Ana Region (8)
Telephone: 909-782-4496
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: Varies

LUST REG 4: Underground Storage Tank Leak List
Los Angeles, Ventura counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6710
Last EDR Contact: 09/06/2011
Next Scheduled EDR Contact: 12/19/2011
Data Release Frequency: No Update Planned

CA FID UST: Facility Inventory Database
The Facility Inventory Database (FID) contains a historical listing of active and inactive underground storage tank locations from the State Water Resource Control Board. Refer to local/county source for current data.

Date of Government Version: 10/31/1994
Date Data Arrived at EDR: 09/05/1995
Date Made Active in Reports: 09/29/1995
Number of Days to Update: 24

Source: California Environmental Protection Agency
Telephone: 916-341-5851
Last EDR Contact: 12/28/1998
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

SLIC: Statewide SLIC Cases
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/19/2011
Date Data Arrived at EDR: 09/20/2011
Date Made Active in Reports: 10/24/2011
Number of Days to Update: 34

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/20/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: Varies

SLIC REG 1: Active Toxic Site Investigations
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2003
Date Data Arrived at EDR: 04/07/2003
Date Made Active in Reports: 04/25/2003
Number of Days to Update: 18

Source: California Regional Water Quality Control Board, North Coast Region (1)
Telephone: 707-576-2220
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 2: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-286-0457
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: Quarterly

SLIC REG 3: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/18/2006
Date Data Arrived at EDR: 05/18/2006
Date Made Active in Reports: 06/15/2006
Number of Days to Update: 28

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-549-3147
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: Semi-Annually

SLIC REG 4: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/17/2004
Date Data Arrived at EDR: 11/18/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 47

Source: Region Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6600
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: Varies

SLIC REG 5: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/01/2005
Date Data Arrived at EDR: 04/05/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 16

Source: Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-3291
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: Semi-Annually

SLIC REG 6V: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/24/2005
Date Data Arrived at EDR: 05/25/2005
Date Made Active in Reports: 06/16/2005
Number of Days to Update: 22

Source: Regional Water Quality Control Board, Victorville Branch
Telephone: 619-241-6583
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: Semi-Annually

SLIC REG 6L: SLIC Sites
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board, Lahontan Region
Telephone: 530-542-5574
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

SLIC REG 7: SLIC List
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/24/2004
Date Data Arrived at EDR: 11/29/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 36

Source: California Regional Quality Control Board, Colorado River Basin Region
Telephone: 760-346-7491
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 8: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2008
Date Data Arrived at EDR: 04/03/2008
Date Made Active in Reports: 04/14/2008
Number of Days to Update: 11

Source: California Region Water Quality Control Board Santa Ana Region (8)
Telephone: 951-782-3298
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: Semi-Annually

SLIC REG 9: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/10/2007
Date Data Arrived at EDR: 09/11/2007
Date Made Active in Reports: 09/28/2007
Number of Days to Update: 17

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-467-2980
Last EDR Contact: 08/08/2011
Next Scheduled EDR Contact: 11/21/2011
Data Release Frequency: Annually

UST: Active UST Facilities
Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 09/19/2011
Date Data Arrived at EDR: 09/20/2011
Date Made Active in Reports: 10/19/2011
Number of Days to Update: 29

Source: SWRCB
Telephone: 916-480-1028
Last EDR Contact: 09/20/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: Semi-Annually

UST MENDOCINO: Mendocino County UST Database
A listing of underground storage tank locations in Mendocino County.

Date of Government Version: 09/23/2009
Date Data Arrived at EDR: 09/23/2009
Date Made Active in Reports: 10/01/2009
Number of Days to Update: 8

Source: Department of Public Health
Telephone: 707-463-4466
Last EDR Contact: 09/06/2011
Next Scheduled EDR Contact: 12/19/2011
Data Release Frequency: Annually

HIST UST: Hazardous Substance Storage Container Database
The Hazardous Substance Storage Container Database is a historical listing of UST sites. Refer to local/county source for current data.

Date of Government Version: 10/15/1990
Date Data Arrived at EDR: 01/25/1991
Date Made Active in Reports: 02/12/1991
Number of Days to Update: 18

Source: State Water Resources Control Board
Telephone: 916-341-5851
Last EDR Contact: 07/26/2001
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

LIENS: Environmental Liens Listing
A listing of property locations with environmental liens for California where DTSC is a lien holder.

Date of Government Version: 09/19/2011
Date Data Arrived at EDR: 09/20/2011
Date Made Active in Reports: 10/24/2011
Number of Days to Update: 34

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: Varies

SWEEPS UST: SWEEPS UST Listing

Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1990's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

Date of Government Version: 06/01/1994
Date Data Arrived at EDR: 07/07/2005
Date Made Active in Reports: 08/11/2005
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/03/2005
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

CHMIRS: California Hazardous Material Incident Report System

California Hazardous Material Incident Reporting System. CHMIRS contains information on reported hazardous material incidents (accidental releases or spills).

Date of Government Version: 12/31/2010
Date Data Arrived at EDR: 05/03/2011
Date Made Active in Reports: 06/15/2011
Number of Days to Update: 43

Source: Office of Emergency Services
Telephone: 916-845-8400
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: Varies

LDS: Land Disposal Sites Listing

The Land Disposal program regulates of waste discharge to land for treatment, storage and disposal in waste management units.

Date of Government Version: 09/19/2011
Date Data Arrived at EDR: 09/20/2011
Date Made Active in Reports: 10/24/2011
Number of Days to Update: 34

Source: State Water Qualilty Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/20/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: Quarterly

MCS: Military Cleanup Sites Listing

The State Water Resources Control Board and nine Regional Water Quality Control Boards partner with the Department of Defense (DoD) through the Defense and State Memorandum of Agreement (DSMOA) to oversee the investigation and remediation of water quality issues at military facilities.

Date of Government Version: 09/19/2011
Date Data Arrived at EDR: 09/20/2011
Date Made Active in Reports: 10/24/2011
Number of Days to Update: 34

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/20/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: Quarterly

AST: Aboveground Petroleum Storage Tank Facilities

Registered Aboveground Storage Tanks.

Date of Government Version: 08/01/2009
Date Data Arrived at EDR: 09/10/2009
Date Made Active in Reports: 10/01/2009
Number of Days to Update: 21

Source: State Water Resources Control Board
Telephone: 916-341-5712
Last EDR Contact: 10/11/2011
Next Scheduled EDR Contact: 01/23/2012
Data Release Frequency: Quarterly

NOTIFY 65: Proposition 65 Records

Listings of all Proposition 65 incidents reported to counties by the State Water Resources Control Board and the Regional Water Quality Control Board. This database is no longer updated by the reporting agency.

Date of Government Version: 10/21/1993
Date Data Arrived at EDR: 11/01/1993
Date Made Active in Reports: 11/19/1993
Number of Days to Update: 18

Source: State Water Resources Control Board
Telephone: 916-445-3846
Last EDR Contact: 09/26/2011
Next Scheduled EDR Contact: 01/09/2012
Data Release Frequency: No Update Planned

DEED: Deed Restriction Listing

Site Mitigation and Brownfields Reuse Program Facility Sites with Deed Restrictions & Hazardous Waste Management Program Facility Sites with Deed / Land Use Restriction. The DTSC Site Mitigation and Brownfields Reuse Program (SMBRP) list includes sites cleaned up under the program's oversight and generally does not include current or former hazardous waste facilities that required a hazardous waste facility permit. The list represents deed restrictions that are active. Some sites have multiple deed restrictions. The DTSC Hazardous Waste Management Program (HWMP) has developed a list of current or former hazardous waste facilities that have a recorded land use restriction at the local county recorder's office. The land use restrictions on this list were required by the DTSC HWMP as a result of the presence of hazardous substances that remain on site after the facility (or part of the facility) has been closed or cleaned up. The types of land use restriction include deed notice, deed restriction, or a land use restriction that binds current and future owners.

Date of Government Version: 09/12/2011
Date Data Arrived at EDR: 09/13/2011
Date Made Active in Reports: 10/07/2011
Number of Days to Update: 24

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 09/13/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: Semi-Annually

VCP: Voluntary Cleanup Program Properties

Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

Date of Government Version: 09/13/2011
Date Data Arrived at EDR: 09/15/2011
Date Made Active in Reports: 10/24/2011
Number of Days to Update: 39

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 09/15/2011
Next Scheduled EDR Contact: 11/21/2011
Data Release Frequency: Quarterly

DRYCLEANERS: Cleaner Facilities

A list of drycleaner related facilities that have EPA ID numbers. These are facilities with certain SIC codes: power laundries, family and commercial; garment pressing and cleaner's agents; linen supply; coin-operated laundries and cleaning; drycleaning plants, except rugs; carpet and upholster cleaning; industrial launderers; laundry and garment services.

Date of Government Version: 06/28/2011
Date Data Arrived at EDR: 07/21/2011
Date Made Active in Reports: 08/11/2011
Number of Days to Update: 21

Source: Department of Toxic Substance Control
Telephone: 916-327-4498
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: Annually

WIP: Well Investigation Program Case List

Well Investigation Program case in the San Gabriel and San Fernando Valley area.

Date of Government Version: 07/03/2009
Date Data Arrived at EDR: 07/21/2009
Date Made Active in Reports: 08/03/2009
Number of Days to Update: 13

Source: Los Angeles Water Quality Control Board
Telephone: 213-576-6726
Last EDR Contact: 10/03/2011
Next Scheduled EDR Contact: 01/16/2012
Data Release Frequency: Varies

ENF: Enforcement Action Listing

A listing of Water Board Enforcement Actions. Formal is everything except Oral/Verbal Communication, Notice of Violation, Expedited Payment Letter, and Staff Enforcement Letter.

Date of Government Version: 08/15/2011
Date Data Arrived at EDR: 08/23/2011
Date Made Active in Reports: 10/03/2011
Number of Days to Update: 41

Source: State Water Resoruces Control Board
Telephone: 916-445-9379
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: Varies

CDL: Clandestine Drug Labs

A listing of drug lab locations. Listing of a location in this database does not indicate that any illegal drug lab materials were or were not present there, and does not constitute a determination that the location either requires or does not require additional cleanup work.

Date of Government Version: 06/30/2011
Date Data Arrived at EDR: 08/11/2011
Date Made Active in Reports: 09/09/2011
Number of Days to Update: 29

Source: Department of Toxic Substances Control
Telephone: 916-255-6504
Last EDR Contact: 10/03/2011
Next Scheduled EDR Contact: 01/16/2012
Data Release Frequency: Varies

RESPONSE: State Response Sites

Identifies confirmed release sites where DTSC is involved in remediation, either in a lead or oversight capacity. These confirmed release sites are generally high-priority and high potential risk.

Date of Government Version: 09/13/2011
Date Data Arrived at EDR: 09/15/2011
Date Made Active in Reports: 10/24/2011
Number of Days to Update: 39

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 09/15/2011
Next Scheduled EDR Contact: 11/21/2011
Data Release Frequency: Quarterly

HAZNET: Facility and Manifest Data

Facility and Manifest Data. The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000 - 1,000,000 annually, representing approximately 350,000 - 500,000 shipments. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, and disposal method.

Date of Government Version: 12/31/2010
Date Data Arrived at EDR: 07/19/2011
Date Made Active in Reports: 08/16/2011
Number of Days to Update: 28

Source: California Environmental Protection Agency
Telephone: 916-255-1136
Last EDR Contact: 10/17/2011
Next Scheduled EDR Contact: 01/30/2012
Data Release Frequency: Annually

EMI: Emissions Inventory Data

Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies.

Date of Government Version: 12/31/2008
Date Data Arrived at EDR: 09/29/2010
Date Made Active in Reports: 10/18/2010
Number of Days to Update: 19

Source: California Air Resources Board
Telephone: 916-322-2990
Last EDR Contact: 09/30/2011
Next Scheduled EDR Contact: 01/09/2012
Data Release Frequency: Varies

ENVIROSTOR: EnviroStor Database

The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

Date of Government Version: 09/13/2011
Date Data Arrived at EDR: 09/15/2011
Date Made Active in Reports: 10/24/2011
Number of Days to Update: 39

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 09/15/2011
Next Scheduled EDR Contact: 11/21/2011
Data Release Frequency: Quarterly

HAULERS: Registered Waste Tire Haulers Listing
A listing of registered waste tire haulers.

Date of Government Version: 09/14/2011
Date Data Arrived at EDR: 09/15/2011
Date Made Active in Reports: 10/24/2011
Number of Days to Update: 39

Source: Integrated Waste Management Board
Telephone: 916-341-6422
Last EDR Contact: 09/06/2011
Next Scheduled EDR Contact: 12/05/2011
Data Release Frequency: Varies

HWP: EnviroStor Permitted Facilities Listing
Detailed information on permitted hazardous waste facilities and corrective action ("cleanups") tracked in EnviroStor.

Date of Government Version: 08/09/2010
Date Data Arrived at EDR: 08/11/2010
Date Made Active in Reports: 08/20/2010
Number of Days to Update: 9

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 09/01/2011
Next Scheduled EDR Contact: 12/12/2011
Data Release Frequency: Quarterly

HWT: Registered Hazardous Waste Transporter Database
A listing of hazardous waste transporters. In California, unless specifically exempted, it is unlawful for any person to transport hazardous wastes unless the person holds a valid registration issued by DTSC. A hazardous waste transporter registration is valid for one year and is assigned a unique registration number.

Date of Government Version: 07/18/2011
Date Data Arrived at EDR: 07/19/2011
Date Made Active in Reports: 08/11/2011
Number of Days to Update: 23

Source: Department of Toxic Substances Control
Telephone: 916-440-7145
Last EDR Contact: 10/21/2011
Next Scheduled EDR Contact: 01/30/2012
Data Release Frequency: Quarterly

MWMP: Medical Waste Management Program Listing
The Medical Waste Management Program (MWMP) ensures the proper handling and disposal of medical waste by permitting and inspecting medical waste Offsite Treatment Facilities (PDF) and Transfer Stations (PDF) throughout the state. MWMP also oversees all Medical Waste Transporters.

Date of Government Version: 09/09/2011
Date Data Arrived at EDR: 09/13/2011
Date Made Active in Reports: 10/10/2011
Number of Days to Update: 27

Source: Department of Public Health
Telephone: 916-558-1784
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: Varies

PROC: Certified Processors Database
A listing of certified processors.

Date of Government Version: 09/08/2011
Date Data Arrived at EDR: 09/20/2011
Date Made Active in Reports: 10/24/2011
Number of Days to Update: 34

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 09/20/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: Quarterly

TRIBAL RECORDS

INDIAN RESERV: Indian Reservations
This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 12/08/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 34

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 10/20/2011
Next Scheduled EDR Contact: 01/30/2012
Data Release Frequency: Semi-Annually

INDIAN ODI: Report on the Status of Open Dumps on Indian Lands
Location of open dumps on Indian land.

Date of Government Version: 12/31/1998
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 01/24/2008
Number of Days to Update: 52

Source: Environmental Protection Agency
Telephone: 703-308-8245
Last EDR Contact: 08/08/2011
Next Scheduled EDR Contact: 11/21/2011
Data Release Frequency: Varies

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land
A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 05/05/2011
Date Data Arrived at EDR: 08/02/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 42

Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 08/02/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: Varies

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 01/31/2011
Date Data Arrived at EDR: 02/01/2011
Date Made Active in Reports: 03/21/2011
Number of Days to Update: 48

Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: Quarterly

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 08/04/2011
Date Data Arrived at EDR: 08/05/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 39

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: Quarterly

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 08/18/2011
Date Data Arrived at EDR: 08/19/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 25

Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: Quarterly

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 02/16/2011
Date Data Arrived at EDR: 06/02/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 103

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 08/02/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: Varies

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 05/10/2011
Date Data Arrived at EDR: 05/11/2011
Date Made Active in Reports: 06/14/2011
Number of Days to Update: 34

Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: Varies

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 08/11/2011
Date Data Arrived at EDR: 08/12/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 32

Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: Semi-Annually

INDIAN UST R1: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 05/05/2011
Date Data Arrived at EDR: 08/08/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 36

Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 08/02/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: Varies

INDIAN UST R6: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 05/10/2011
Date Data Arrived at EDR: 05/11/2011
Date Made Active in Reports: 06/14/2011
Number of Days to Update: 34

Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: Semi-Annually

INDIAN UST R7: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 04/01/2011
Date Data Arrived at EDR: 06/01/2011
Date Made Active in Reports: 06/14/2011
Number of Days to Update: 13

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 08/02/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: Varies

INDIAN UST R8: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 08/18/2011
Date Data Arrived at EDR: 08/19/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 25

Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: Quarterly

INDIAN UST R9: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 08/04/2011
Date Data Arrived at EDR: 08/05/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 39

Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: Quarterly

INDIAN UST R4: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 08/11/2011
Date Data Arrived at EDR: 08/12/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 32

Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: Semi-Annually

INDIAN UST R5: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 07/01/2011
Date Data Arrived at EDR: 08/26/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 18

Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: Varies

INDIAN UST R10: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 08/04/2011
Date Data Arrived at EDR: 08/05/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 39

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: Quarterly

INDIAN VCP R1: Voluntary Cleanup Priority Listing

A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 05/05/2011
Date Data Arrived at EDR: 07/05/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 70

Source: EPA, Region 1
Telephone: 617-918-1102
Last EDR Contact: 10/04/2011
Next Scheduled EDR Contact: 01/16/2012
Data Release Frequency: Varies

INDIAN VCP R7: Voluntary Cleanup Priority Lisitng

A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008
Date Data Arrived at EDR: 04/22/2008
Date Made Active in Reports: 05/19/2008
Number of Days to Update: 27

Source: EPA, Region 7
Telephone: 913-551-7365
Last EDR Contact: 04/20/2009
Next Scheduled EDR Contact: 07/20/2009
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

EDR PROPRIETARY RECORDS

Manufactured Gas Plants: EDR Proprietary Manufactured Gas Plants

The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

COUNTY RECORDS

ALAMEDA COUNTY:

Contaminated Sites

A listing of contaminated sites overseen by the Toxic Release Program (oil and groundwater contamination from chemical releases and spills) and the Leaking Underground Storage Tank Program (soil and ground water contamination from leaking petroleum USTs).

Date of Government Version: 07/21/2011
Date Data Arrived at EDR: 07/21/2011
Date Made Active in Reports: 08/11/2011
Number of Days to Update: 21

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 10/03/2011
Next Scheduled EDR Contact: 01/16/2012
Data Release Frequency: Semi-Annually

Underground Tanks

Underground storage tank sites located in Alameda county.

Date of Government Version: 07/21/2011
Date Data Arrived at EDR: 07/21/2011
Date Made Active in Reports: 08/11/2011
Number of Days to Update: 21

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 10/03/2011
Next Scheduled EDR Contact: 01/16/2012
Data Release Frequency: Semi-Annually

BUTTE COUNTY:

CUPA Facility Listing

Cupa facility list.

Date of Government Version: 03/29/2011
Date Data Arrived at EDR: 04/20/2011
Date Made Active in Reports: 05/17/2011
Number of Days to Update: 27

Source: Public Health Department
Telephone: 530-538-7149
Last EDR Contact: 10/17/2011
Next Scheduled EDR Contact: 01/30/2012
Data Release Frequency: Varies

COLUSA COUNTY:

CUPA Facility List

Cupa facility list.

Date of Government Version: 12/01/2010
Date Data Arrived at EDR: 04/20/2011
Date Made Active in Reports: 05/17/2011
Number of Days to Update: 27

Source: Health & Human Services
Telephone: 530-458-0396
Last EDR Contact: 10/17/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: Varies

CONTRA COSTA COUNTY:

Site List
List includes sites from the underground tank, hazardous waste generator and business plan/2185 programs.

Date of Government Version: 08/30/2011
Date Data Arrived at EDR: 08/31/2011
Date Made Active in Reports: 09/19/2011
Number of Days to Update: 19

Source: Contra Costa Health Services Department
Telephone: 925-646-2286
Last EDR Contact: 08/09/2011
Next Scheduled EDR Contact: 11/21/2011
Data Release Frequency: Semi-Annually

EL DORADO COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 09/09/2011
Date Data Arrived at EDR: 09/09/2011
Date Made Active in Reports: 10/03/2011
Number of Days to Update: 24

Source: El Dorado County Environmental Management Department
Telephone: 530-621-6623
Last EDR Contact: 08/22/2011
Next Scheduled EDR Contact: 11/21/2011
Data Release Frequency: Varies

FRESNO COUNTY:

CUPA Resources List
Certified Unified Program Agency. CUPA's are responsible for implementing a unified hazardous materials and hazardous waste management regulatory program. The agency provides oversight of businesses that deal with hazardous materials, operate underground storage tanks or aboveground storage tanks.

Date of Government Version: 07/18/2011
Date Data Arrived at EDR: 07/19/2011
Date Made Active in Reports: 08/11/2011
Number of Days to Update: 23

Source: Dept. of Community Health
Telephone: 559-445-3271
Last EDR Contact: 10/17/2011
Next Scheduled EDR Contact: 01/30/2012
Data Release Frequency: Semi-Annually

HUMBOLDT COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 02/08/2011
Date Data Arrived at EDR: 03/03/2011
Date Made Active in Reports: 03/24/2011
Number of Days to Update: 21

Source: Humboldt County Environmental Health
Telephone: N/A
Last EDR Contact: 10/27/2011
Next Scheduled EDR Contact: 12/12/2011
Data Release Frequency: Varies

INYO COUNTY:

CUPA Facility List
Cupa facility list.

Date of Government Version: 09/12/2011
Date Data Arrived at EDR: 09/13/2011
Date Made Active in Reports: 10/03/2011
Number of Days to Update: 20

Source: Inyo County Environmental Health Services
Telephone: 760-878-0238
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/12/2011
Data Release Frequency: Varies

KERN COUNTY:

Underground Storage Tank Sites & Tank Listing
Kern County Sites and Tanks Listing.

Date of Government Version: 08/31/2010
Date Data Arrived at EDR: 09/01/2010
Date Made Active in Reports: 09/30/2010
Number of Days to Update: 29

Source: Kern County Environment Health Services Department
Telephone: 661-862-8700
Last EDR Contact: 09/13/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: Quarterly

KINGS COUNTY:

CUPA Facility List
A listing of sites included in the county?s Certified Unified Program Agency database. California?s Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 06/09/2011
Date Data Arrived at EDR: 06/09/2011
Date Made Active in Reports: 07/08/2011
Number of Days to Update: 29

Source: Kings County Department of Public Health
Telephone: 559-584-1411
Last EDR Contact: 09/26/2011
Next Scheduled EDR Contact: 12/12/2011
Data Release Frequency: Varies

LOS ANGELES COUNTY:

San Gabriel Valley Areas of Concern
San Gabriel Valley areas where VOC contamination is at or above the MCL as designated by region 9 EPA office.

Date of Government Version: 03/30/2009
Date Data Arrived at EDR: 03/31/2009
Date Made Active in Reports: 10/23/2009
Number of Days to Update: 206

Source: EPA Region 9
Telephone: 415-972-3178
Last EDR Contact: 09/26/2011
Next Scheduled EDR Contact: 01/09/2012
Data Release Frequency: No Update Planned

HMS: Street Number List
Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 07/28/2011
Date Data Arrived at EDR: 09/13/2011
Date Made Active in Reports: 10/07/2011
Number of Days to Update: 24

Source: Department of Public Works
Telephone: 626-458-3517
Last EDR Contact: 10/17/2011
Next Scheduled EDR Contact: 01/30/2012
Data Release Frequency: Semi-Annually

List of Solid Waste Facilities
Solid Waste Facilities in Los Angeles County.

Date of Government Version: 07/25/2011
Date Data Arrived at EDR: 07/27/2011
Date Made Active in Reports: 08/11/2011
Number of Days to Update: 15

Source: La County Department of Public Works
Telephone: 818-458-5185
Last EDR Contact: 10/25/2011
Next Scheduled EDR Contact: 11/07/2011
Data Release Frequency: Varies

City of Los Angeles Landfills
Landfills owned and maintained by the City of Los Angeles.

Date of Government Version: 03/05/2009
Date Data Arrived at EDR: 03/10/2009
Date Made Active in Reports: 04/08/2009
Number of Days to Update: 29

Source: Engineering & Construction Division
Telephone: 213-473-7869
Last EDR Contact: 08/23/2011
Next Scheduled EDR Contact: 12/05/2011
Data Release Frequency: Varies

Site Mitigation List
Industrial sites that have had some sort of spill or complaint.

Date of Government Version: 02/09/2011
Date Data Arrived at EDR: 02/09/2011
Date Made Active in Reports: 03/04/2011
Number of Days to Update: 23

Source: Community Health Services
Telephone: 323-890-7806
Last EDR Contact: 10/24/2011
Next Scheduled EDR Contact: 02/06/2012
Data Release Frequency: Annually

City of El Segundo Underground Storage Tank
Underground storage tank sites located in El Segundo city.

Date of Government Version: 02/03/2011
Date Data Arrived at EDR: 02/08/2011
Date Made Active in Reports: 03/03/2011
Number of Days to Update: 23

Source: City of El Segundo Fire Department
Telephone: 310-524-2236
Last EDR Contact: 10/24/2011
Next Scheduled EDR Contact: 02/06/2012
Data Release Frequency: Semi-Annually

City of Long Beach Underground Storage Tank
Underground storage tank sites located in the city of Long Beach.

Date of Government Version: 03/28/2003
Date Data Arrived at EDR: 10/23/2003
Date Made Active in Reports: 11/26/2003
Number of Days to Update: 34

Source: City of Long Beach Fire Department
Telephone: 562-570-2563
Last EDR Contact: 05/02/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: Annually

City of Torrance Underground Storage Tank
Underground storage tank sites located in the city of Torrance.

Date of Government Version: 07/18/2011
Date Data Arrived at EDR: 07/21/2011
Date Made Active in Reports: 08/11/2011
Number of Days to Update: 21

Source: City of Torrance Fire Department
Telephone: 310-618-2973
Last EDR Contact: 10/17/2011
Next Scheduled EDR Contact: 01/30/2012
Data Release Frequency: Semi-Annually

MADERA COUNTY:

CUPA Facility List
A listing of sites included in the county?s Certified Unified Program Agency database. California?s Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 09/13/2011
Date Data Arrived at EDR: 09/13/2011
Date Made Active in Reports: 10/04/2011
Number of Days to Update: 21

Source: Madera County Environmental Health
Telephone: 559-675-7823
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/12/2011
Data Release Frequency: Varies

MARIN COUNTY:

Underground Storage Tank Sites
Currently permitted USTs in Marin County.

Date of Government Version: 07/15/2011
Date Data Arrived at EDR: 07/25/2011
Date Made Active in Reports: 08/11/2011
Number of Days to Update: 17

Source: Public Works Department Waste Management
Telephone: 415-499-6647
Last EDR Contact: 10/11/2011
Next Scheduled EDR Contact: 01/23/2012
Data Release Frequency: Semi-Annually

MERCED COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 09/23/2011
Date Data Arrived at EDR: 09/23/2011
Date Made Active in Reports: 10/24/2011
Number of Days to Update: 31

Source: Merced County Environmental Health
Telephone: 209-381-1094
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/12/2011
Data Release Frequency: Varies

MONTEREY COUNTY:

CUPA Facility Listing
CUPA Program listing from the Environmental Health Division.

Date of Government Version: 09/19/2011
Date Data Arrived at EDR: 09/20/2011
Date Made Active in Reports: 10/24/2011
Number of Days to Update: 34

Source: Monterey County Health Department
Telephone: 831-796-1297
Last EDR Contact: 08/31/2011
Next Scheduled EDR Contact: 12/12/2011
Data Release Frequency: Varies

NAPA COUNTY:

Sites With Reported Contamination
A listing of leaking underground storage tank sites located in Napa county.

Date of Government Version: 07/09/2008
Date Data Arrived at EDR: 07/09/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 22

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 09/06/2011
Next Scheduled EDR Contact: 12/19/2011
Data Release Frequency: No Update Planned

Closed and Operating Underground Storage Tank Sites
Underground storage tank sites located in Napa county.

Date of Government Version: 01/15/2008
Date Data Arrived at EDR: 01/16/2008
Date Made Active in Reports: 02/08/2008
Number of Days to Update: 23

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 09/06/2011
Next Scheduled EDR Contact: 12/19/2011
Data Release Frequency: No Update Planned

NEVADA COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 08/22/2011
Date Data Arrived at EDR: 08/23/2011
Date Made Active in Reports: 09/19/2011
Number of Days to Update: 27

Source: Community Development Agency
Telephone: 530-265-1467
Last EDR Contact: 08/22/2011
Next Scheduled EDR Contact: 11/21/2011
Data Release Frequency: Varies

ORANGE COUNTY:

List of Industrial Site Cleanups
Petroleum and non-petroleum spills.

Date of Government Version: 08/01/2011
Date Data Arrived at EDR: 08/23/2011
Date Made Active in Reports: 09/19/2011
Number of Days to Update: 27

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 08/17/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: Annually

List of Underground Storage Tank Cleanups
Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 08/02/2011
Date Data Arrived at EDR: 08/23/2011
Date Made Active in Reports: 10/03/2011
Number of Days to Update: 41

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 08/17/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: Quarterly

List of Underground Storage Tank Facilities
Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 08/01/2011
Date Data Arrived at EDR: 08/23/2011
Date Made Active in Reports: 09/16/2011
Number of Days to Update: 24

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 08/17/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: Quarterly

PLACER COUNTY:

Master List of Facilities
List includes aboveground tanks, underground tanks and cleanup sites.

Date of Government Version: 09/12/2011
Date Data Arrived at EDR: 09/13/2011
Date Made Active in Reports: 10/18/2011
Number of Days to Update: 35

Source: Placer County Health and Human Services
Telephone: 530-889-7312
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: Semi-Annually

RIVERSIDE COUNTY:

Listing of Underground Tank Cleanup Sites
Riverside County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 07/14/2011
Date Data Arrived at EDR: 07/22/2011
Date Made Active in Reports: 08/11/2011
Number of Days to Update: 20

Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 09/26/2011
Next Scheduled EDR Contact: 01/09/2012
Data Release Frequency: Quarterly

Underground Storage Tank Tank List
Underground storage tank sites located in Riverside county.

Date of Government Version: 07/20/2011
Date Data Arrived at EDR: 07/22/2011
Date Made Active in Reports: 08/11/2011
Number of Days to Update: 20

Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 09/26/2011
Next Scheduled EDR Contact: 01/26/2012
Data Release Frequency: Quarterly

SACRAMENTO COUNTY:

Toxic Site Clean-Up List
List of sites where unauthorized releases of potentially hazardous materials have occurred.

Date of Government Version: 05/02/2011
Date Data Arrived at EDR: 07/19/2011
Date Made Active in Reports: 08/11/2011
Number of Days to Update: 23

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 10/07/2011
Next Scheduled EDR Contact: 01/23/2012
Data Release Frequency: Quarterly

Master Hazardous Materials Facility List
Any business that has hazardous materials on site - hazardous material storage sites, underground storage tanks, waste generators.

Date of Government Version: 05/02/2011
Date Data Arrived at EDR: 07/19/2011
Date Made Active in Reports: 08/11/2011
Number of Days to Update: 23

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 10/07/2011
Next Scheduled EDR Contact: 01/23/2012
Data Release Frequency: Quarterly

SAN BERNARDINO COUNTY:

Hazardous Material Permits
This listing includes underground storage tanks, medical waste handlers/generators, hazardous materials handlers, hazardous waste generators, and waste oil generators/handlers.

Date of Government Version: 08/26/2011
Date Data Arrived at EDR: 08/31/2011
Date Made Active in Reports: 09/19/2011
Number of Days to Update: 19

Source: San Bernardino County Fire Department Hazardous Materials Division
Telephone: 909-387-3041
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: Quarterly

SAN DIEGO COUNTY:

Hazardous Materials Management Division Database
The database includes: HE58 - This report contains the business name, site address, business phone number, establishment 'H' permit number, type of permit, and the business status. HE17 - In addition to providing the same information provided in the HE58 listing, HE17 provides inspection dates, violations received by the establishment, hazardous waste generated, the quantity, method of storage, treatment/disposal of waste and the hauler, and information on underground storage tanks. Unauthorized Release List - Includes a summary of environmental contamination cases in San Diego County (underground tank cases, non-tank cases, groundwater contamination, and soil contamination are included.)

Date of Government Version: 09/09/2010
Date Data Arrived at EDR: 09/15/2010
Date Made Active in Reports: 09/29/2010
Number of Days to Update: 14

Source: Hazardous Materials Management Division
Telephone: 619-338-2268
Last EDR Contact: 09/16/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: Quarterly

Solid Waste Facilities
San Diego County Solid Waste Facilities.

Date of Government Version: 10/01/2010
Date Data Arrived at EDR: 11/16/2010
Date Made Active in Reports: 01/25/2011
Number of Days to Update: 70

Source: Department of Health Services
Telephone: 619-338-2209
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: Varies

Environmental Case Listing
The listing contains all underground tank release cases and projects pertaining to properties contaminated with hazardous substances that are actively under review by the Site Assessment and Mitigation Program.

Date of Government Version: 03/23/2010
Date Data Arrived at EDR: 06/15/2010
Date Made Active in Reports: 07/09/2010
Number of Days to Update: 24

Source: San Diego County Department of Environmental Health
Telephone: 619-338-2371
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

SAN FRANCISCO COUNTY:

Local Oversite Facilities
A listing of leaking underground storage tank sites located in San Francisco county.

Date of Government Version: 09/19/2008
Date Data Arrived at EDR: 09/19/2008
Date Made Active in Reports: 09/29/2008
Number of Days to Update: 10

Source: Department Of Public Health San Francisco County
Telephone: 415-252-3920
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: Quarterly

Underground Storage Tank Information
Underground storage tank sites located in San Francisco county.

Date of Government Version: 11/29/2010
Date Data Arrived at EDR: 03/10/2011
Date Made Active in Reports: 03/15/2011
Number of Days to Update: 5

Source: Department of Public Health
Telephone: 415-252-3920
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: Quarterly

SAN JOAQUIN COUNTY:

San Joaquin Co. UST
A listing of underground storage tank locations in San Joaquin county.

Date of Government Version: 09/27/2011
Date Data Arrived at EDR: 09/28/2011
Date Made Active in Reports: 10/19/2011
Number of Days to Update: 21

Source: Environmental Health Department
Telephone: N/A
Last EDR Contact: 09/26/2011
Next Scheduled EDR Contact: 01/09/2012
Data Release Frequency: Semi-Annually

SAN LUIS OBISPO COUNTY:

CUPA Facility List
Cupa Facility List.

Date of Government Version: 09/12/2011
Date Data Arrived at EDR: 09/13/2011
Date Made Active in Reports: 10/07/2011
Number of Days to Update: 24

Source: San Luis Obispo County Public Health Department
Telephone: 805-781-5596
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/12/2011
Data Release Frequency: Varies

SAN MATEO COUNTY:

Business Inventory
List includes Hazardous Materials Business Plan, hazardous waste generators, and underground storage tanks.

Date of Government Version: 07/13/2011
Date Data Arrived at EDR: 07/15/2011
Date Made Active in Reports: 08/11/2011
Number of Days to Update: 27

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/12/2012
Data Release Frequency: Annually

Fuel Leak List
A listing of leaking underground storage tank sites located in San Mateo county.

Date of Government Version: 09/20/2011
Date Data Arrived at EDR: 09/22/2011
Date Made Active in Reports: 10/24/2011
Number of Days to Update: 32

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: Semi-Annually

SANTA BARBARA COUNTY:

CUPA Facility Listing
CUPA Program Listing from the Environmental Health Services division.

Date of Government Version: 09/08/2011
Date Data Arrived at EDR: 09/09/2011
Date Made Active in Reports: 10/07/2011
Number of Days to Update: 28

Source: Santa Barbara County Public Health Department
Telephone: 805-686-8167
Last EDR Contact: 08/31/2011
Next Scheduled EDR Contact: 12/12/2011
Data Release Frequency: Varies

SANTA CLARA COUNTY:

HIST LUST - Fuel Leak Site Activity Report
A listing of open and closed leaking underground storage tanks. This listing is no longer updated by the county. Leaking underground storage tanks are now handled by the Department of Environmental Health.

Date of Government Version: 03/29/2005
Date Data Arrived at EDR: 03/30/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 22

Source: Santa Clara Valley Water District
Telephone: 408-265-2600
Last EDR Contact: 03/23/2009
Next Scheduled EDR Contact: 06/22/2009
Data Release Frequency: No Update Planned

LOP Listing
A listing of leaking underground storage tanks located in Santa Clara county.

Date of Government Version: 09/06/2011
Date Data Arrived at EDR: 09/13/2011
Date Made Active in Reports: 10/10/2011
Number of Days to Update: 27

Source: Department of Environmental Health
Telephone: 408-918-3417
Last EDR Contact: 09/06/2011
Next Scheduled EDR Contact: 12/19/2011
Data Release Frequency: Annually

Hazardous Material Facilities
Hazardous material facilities, including underground storage tank sites.

Date of Government Version: 09/01/2011
Date Data Arrived at EDR: 09/01/2011
Date Made Active in Reports: 10/03/2011
Number of Days to Update: 32

Source: City of San Jose Fire Department
Telephone: 408-535-7694
Last EDR Contact: 08/31/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: Annually

SANTA CRUZ COUNTY:

CUPA Facility List
CUPA facility listing.

Date of Government Version: 08/31/2011
Date Data Arrived at EDR: 08/31/2011
Date Made Active in Reports: 09/09/2011
Number of Days to Update: 9

Source: Santa Cruz County Environmental Health
Telephone: 831-464-2761
Last EDR Contact: 08/31/2011
Next Scheduled EDR Contact: 12/12/2011
Data Release Frequency: Varies

SHASTA COUNTY:

CUPA Facility List
Cupa Facility List.

Date of Government Version: 08/31/2011
Date Data Arrived at EDR: 08/31/2011
Date Made Active in Reports: 09/19/2011
Number of Days to Update: 19

Source: Shasta County Department of Resource Management
Telephone: 530-225-5789
Last EDR Contact: 08/31/2011
Next Scheduled EDR Contact: 12/12/2011
Data Release Frequency: Varies

SOLANO COUNTY:

Leaking Underground Storage Tanks
A listing of leaking underground storage tank sites located in Solano county.

Date of Government Version: 09/20/2011
Date Data Arrived at EDR: 09/28/2011
Date Made Active in Reports: 10/25/2011
Number of Days to Update: 27

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: Quarterly

Underground Storage Tanks
Underground storage tank sites located in Solano county.

Date of Government Version: 09/20/2011
Date Data Arrived at EDR: 09/28/2011
Date Made Active in Reports: 10/19/2011
Number of Days to Update: 21

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: Quarterly

SONOMA COUNTY:

Leaking Underground Storage Tank Sites
A listing of leaking underground storage tank sites located in Sonoma county.

Date of Government Version: 04/05/2011
Date Data Arrived at EDR: 04/06/2011
Date Made Active in Reports: 05/12/2011
Number of Days to Update: 36

Source: Department of Health Services
Telephone: 707-565-6565
Last EDR Contact: 10/03/2011
Next Scheduled EDR Contact: 01/16/2012
Data Release Frequency: Quarterly

SUTTER COUNTY:

Underground Storage Tanks
Underground storage tank sites located in Sutter county.

Date of Government Version: 09/12/2011
Date Data Arrived at EDR: 09/13/2011
Date Made Active in Reports: 10/19/2011
Number of Days to Update: 36

Source: Sutter County Department of Agriculture
Telephone: 530-822-7500
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: Semi-Annually

VENTURA COUNTY:

Business Plan, Hazardous Waste Producers, and Operating Underground Tanks

The BWT list indicates by site address whether the Environmental Health Division has Business Plan (B), Waste Producer (W), and/or Underground Tank (T) information.

Date of Government Version: 07/26/2011
Date Data Arrived at EDR: 08/26/2011
Date Made Active in Reports: 09/19/2011
Number of Days to Update: 24

Source: Ventura County Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 08/23/2011
Next Scheduled EDR Contact: 12/05/2011
Data Release Frequency: Quarterly

Inventory of Illegal Abandoned and Inactive Sites

Ventura County Inventory of Closed, Illegal Abandoned, and Inactive Sites.

Date of Government Version: 09/14/2011
Date Data Arrived at EDR: 09/15/2011
Date Made Active in Reports: 10/24/2011
Number of Days to Update: 39

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 10/11/2011
Next Scheduled EDR Contact: 01/23/2012
Data Release Frequency: Annually

Listing of Underground Tank Cleanup Sites

Ventura County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 05/29/2008
Date Data Arrived at EDR: 06/24/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 37

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 08/23/2011
Next Scheduled EDR Contact: 12/05/2011
Data Release Frequency: Quarterly

Medical Waste Program List

To protect public health and safety and the environment from potential exposure to disease causing agents, the Environmental Health Division Medical Waste Program regulates the generation, handling, storage, treatment and disposal of medical waste throughout the County.

Date of Government Version: 07/26/2011
Date Data Arrived at EDR: 08/08/2011
Date Made Active in Reports: 09/09/2011
Number of Days to Update: 32

Source: Ventura County Resource Management Agency
Telephone: 805-654-2813
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: Quarterly

Underground Tank Closed Sites List

Ventura County Operating Underground Storage Tank Sites (UST)/Underground Tank Closed Sites List.

Date of Government Version: 08/30/2011
Date Data Arrived at EDR: 09/20/2011
Date Made Active in Reports: 10/19/2011
Number of Days to Update: 29

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 09/20/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: Quarterly

YOLO COUNTY:

Underground Storage Tank Comprehensive Facility Report
Underground storage tank sites located in Yolo county.

Date of Government Version: 08/15/2011
Date Data Arrived at EDR: 08/23/2011
Date Made Active in Reports: 09/16/2011
Number of Days to Update: 24

Source: Yolo County Department of Health
Telephone: 530-666-8646
Last EDR Contact: 10/11/2011
Next Scheduled EDR Contact: 01/09/2012
Data Release Frequency: Annually

YUBA COUNTY:

CUPA Facility List
CUPA facility listing for Yuba County.

Date of Government Version: 08/23/2011
Date Data Arrived at EDR: 08/26/2011
Date Made Active in Reports: 09/19/2011
Number of Days to Update: 24

Source: Yuba County Environmental Health Department
Telephone: 530-749-7523
Last EDR Contact: 08/08/2011
Next Scheduled EDR Contact: 11/21/2011
Data Release Frequency: Varies

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

CT MANIFEST: Hazardous Waste Manifest Data
Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

Date of Government Version: 12/31/2007
Date Data Arrived at EDR: 08/26/2009
Date Made Active in Reports: 09/11/2009
Number of Days to Update: 16

Source: Department of Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 10/28/2011
Next Scheduled EDR Contact: 12/05/2011
Data Release Frequency: Annually

NJ MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2010
Date Data Arrived at EDR: 07/20/2011
Date Made Active in Reports: 08/11/2011
Number of Days to Update: 22

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 10/18/2011
Next Scheduled EDR Contact: 01/30/2012
Data Release Frequency: Annually

NY MANIFEST: Facility and Manifest Data
Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 08/01/2011
Date Data Arrived at EDR: 08/09/2011
Date Made Active in Reports: 09/16/2011
Number of Days to Update: 38

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 08/09/2011
Next Scheduled EDR Contact: 11/21/2011
Data Release Frequency: Annually

PA MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2008
Date Data Arrived at EDR: 12/01/2009
Date Made Active in Reports: 12/14/2009
Number of Days to Update: 13

Source: Department of Environmental Protection
Telephone: 717-783-8990
Last EDR Contact: 09/26/2011
Next Scheduled EDR Contact: 01/09/2012
Data Release Frequency: Annually

RI MANIFEST: Manifest information
Hazardous waste manifest information

Date of Government Version: 12/31/2010
Date Data Arrived at EDR: 06/24/2011
Date Made Active in Reports: 06/30/2011
Number of Days to Update: 6

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 08/31/2011
Next Scheduled EDR Contact: 12/12/2011
Data Release Frequency: Annually

WI MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2010
Date Data Arrived at EDR: 08/19/2011
Date Made Active in Reports: 09/15/2011
Number of Days to Update: 27

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: Annually

Oil/Gas Pipelines: This data was obtained by EDR from the USGS in 1994. It is referred to by USGS as GeoData Digital Line Graphs from 1:100,000-Scale Maps. It was extracted from the transportation category including some oil, but primarily gas pipelines.

Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:
Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing
Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.

Daycare Centers: Licensed Facilities
Source: Department of Social Services
Telephone: 916-657-4041

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 2003 & 2011 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 and 2005 from the U.S. Fish and Wildlife Service.

STREET AND ADDRESS INFORMATION

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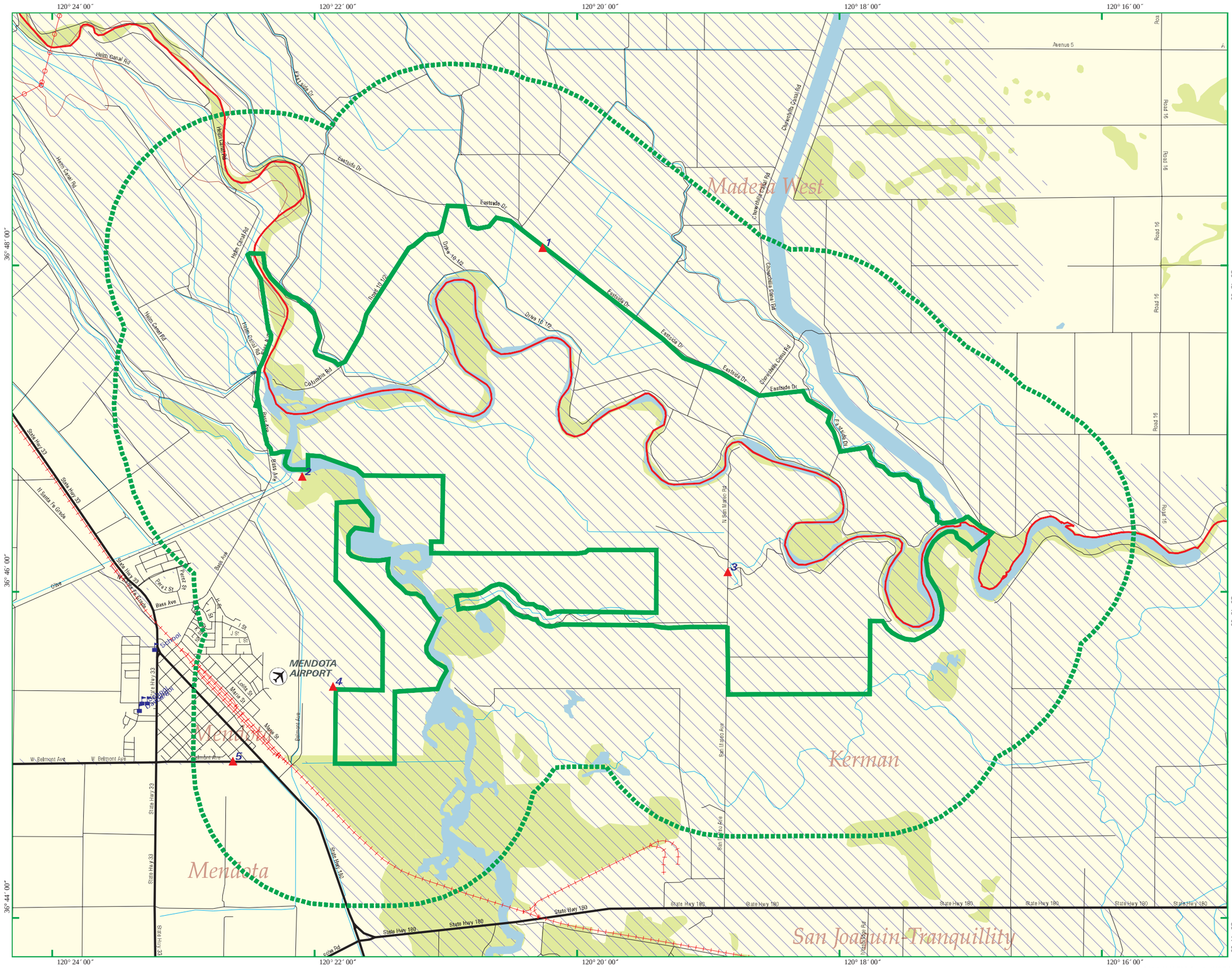
EDR DataMap®
Area Study

San Joaquin River Restoration Project Alternatives



Listed Sites
Earthquake Epicenters (Richter 5 or greater)
Search Boundary
Roads
Major Roads
Waterways
Railroads
Contour Lines
Pipelines
Powerlines
Fault Lines
Water
Superfund Sites
Federal DOD Sites
Indian Reservations BIA
100-Yr Flood Zones
National Wetland Inventory

N

Mendota, CA

0 1/2 1

Scale in Miles

EDR® Environmental Data Resources, Inc

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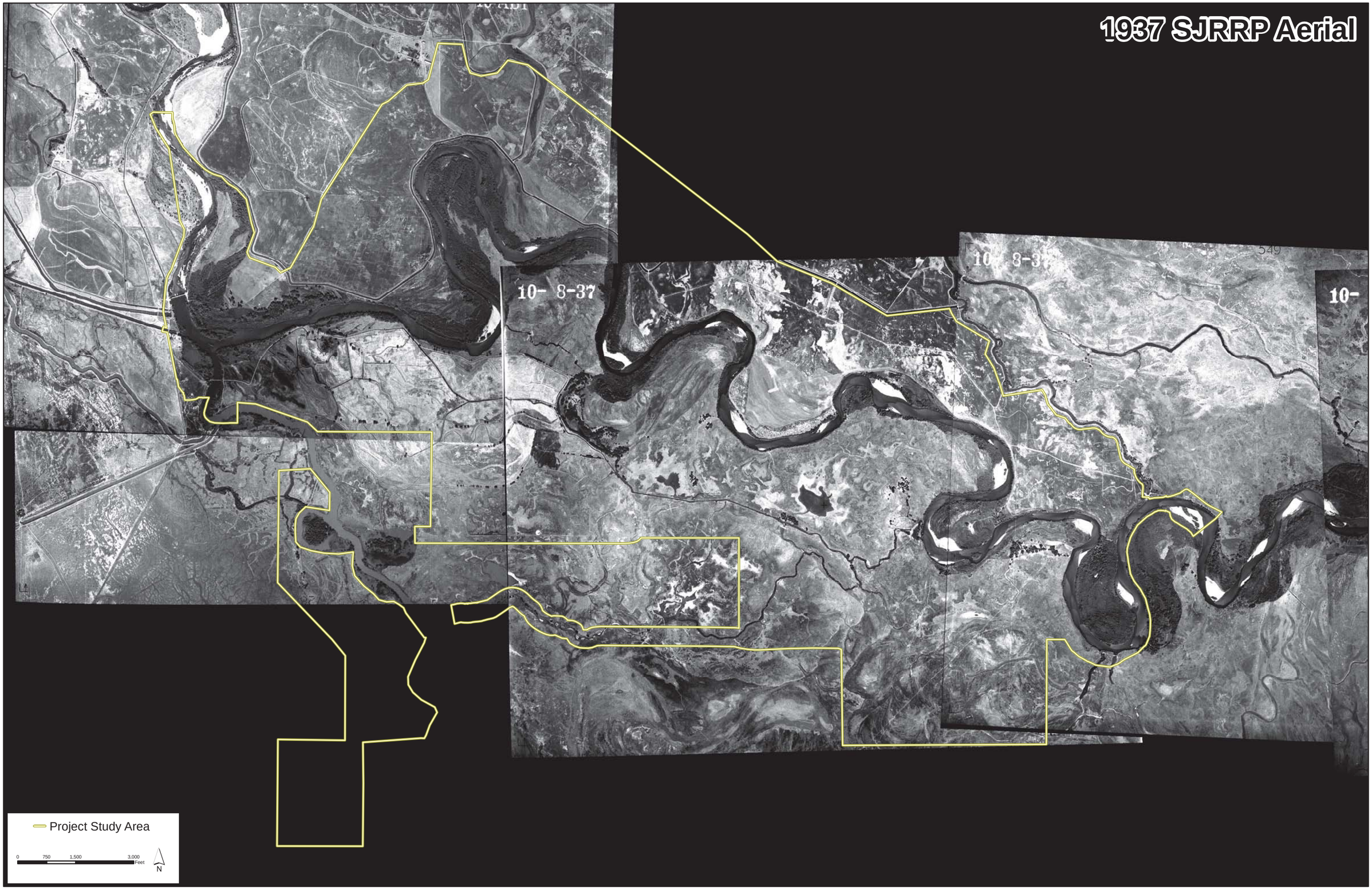
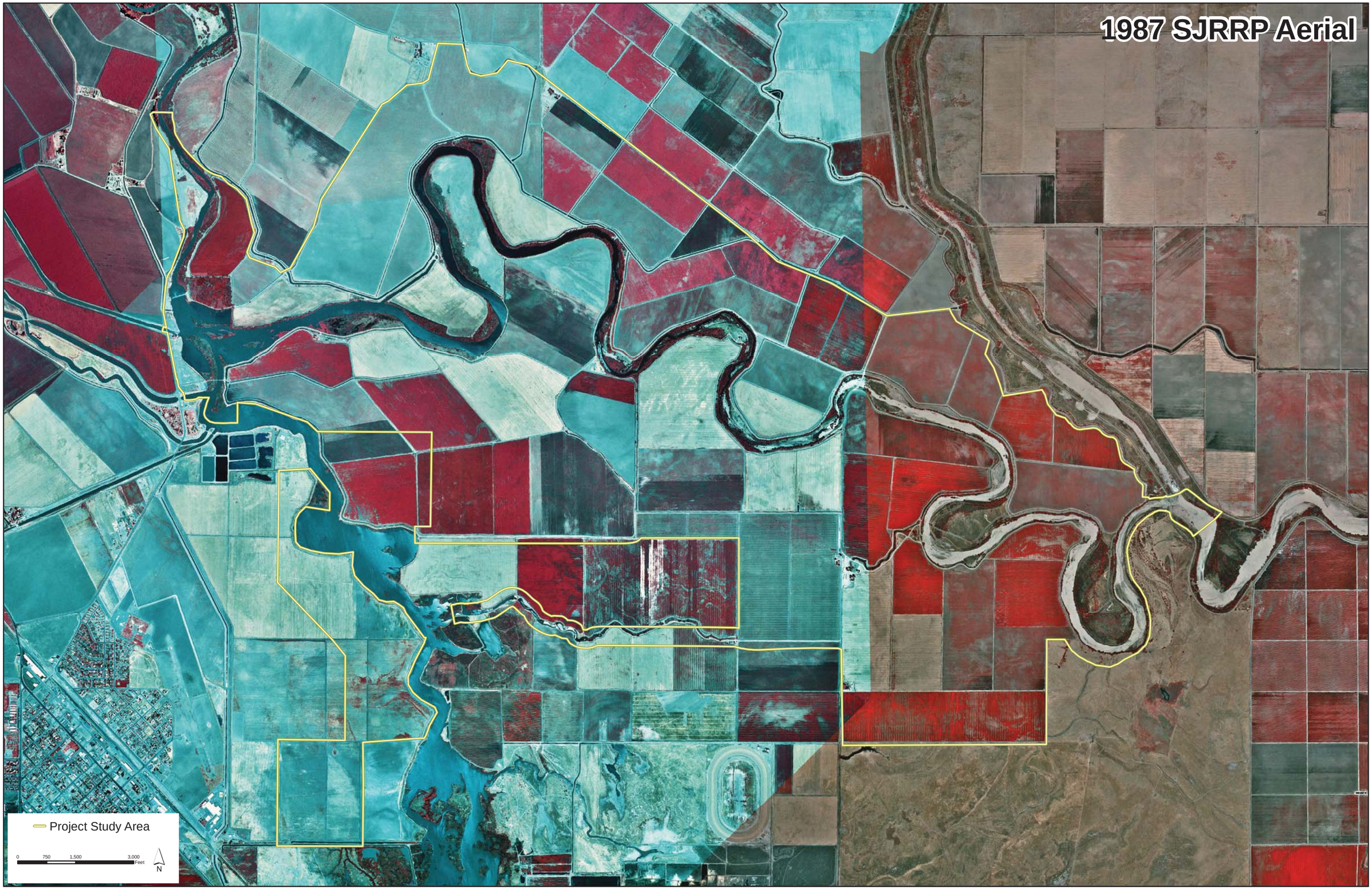
3196001.1s - 31 Oct 11

Attachment B

Historical Documentation

1937 SJRRP Aerial




1987 SJRRP Aerial
Project Study Area
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Feet
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2009 SJRRP Aerial
Project Study Area
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3,000
Feet
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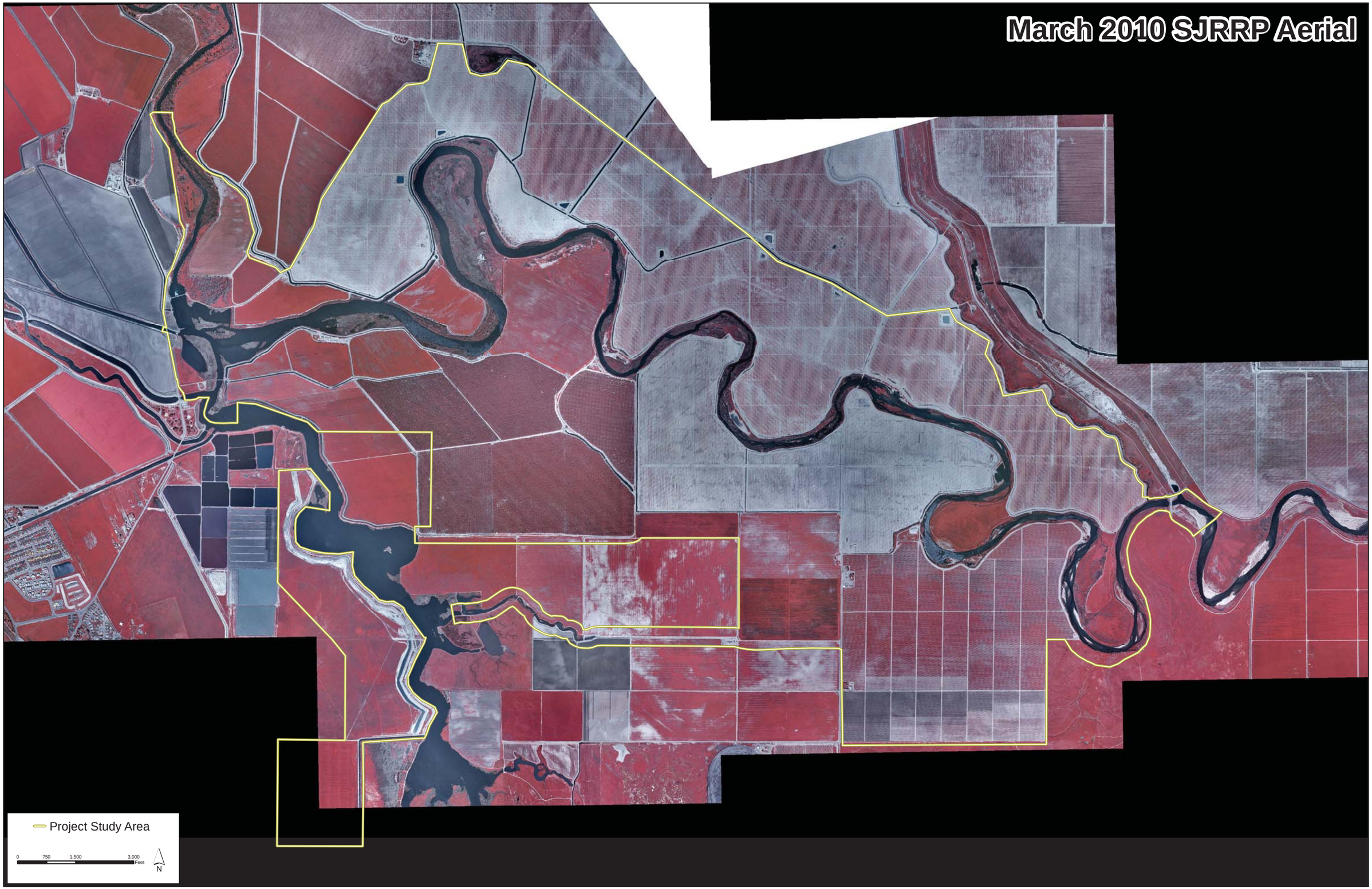
March 2010 SJRRP Aerial
Project Study Area
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3,000
Feet
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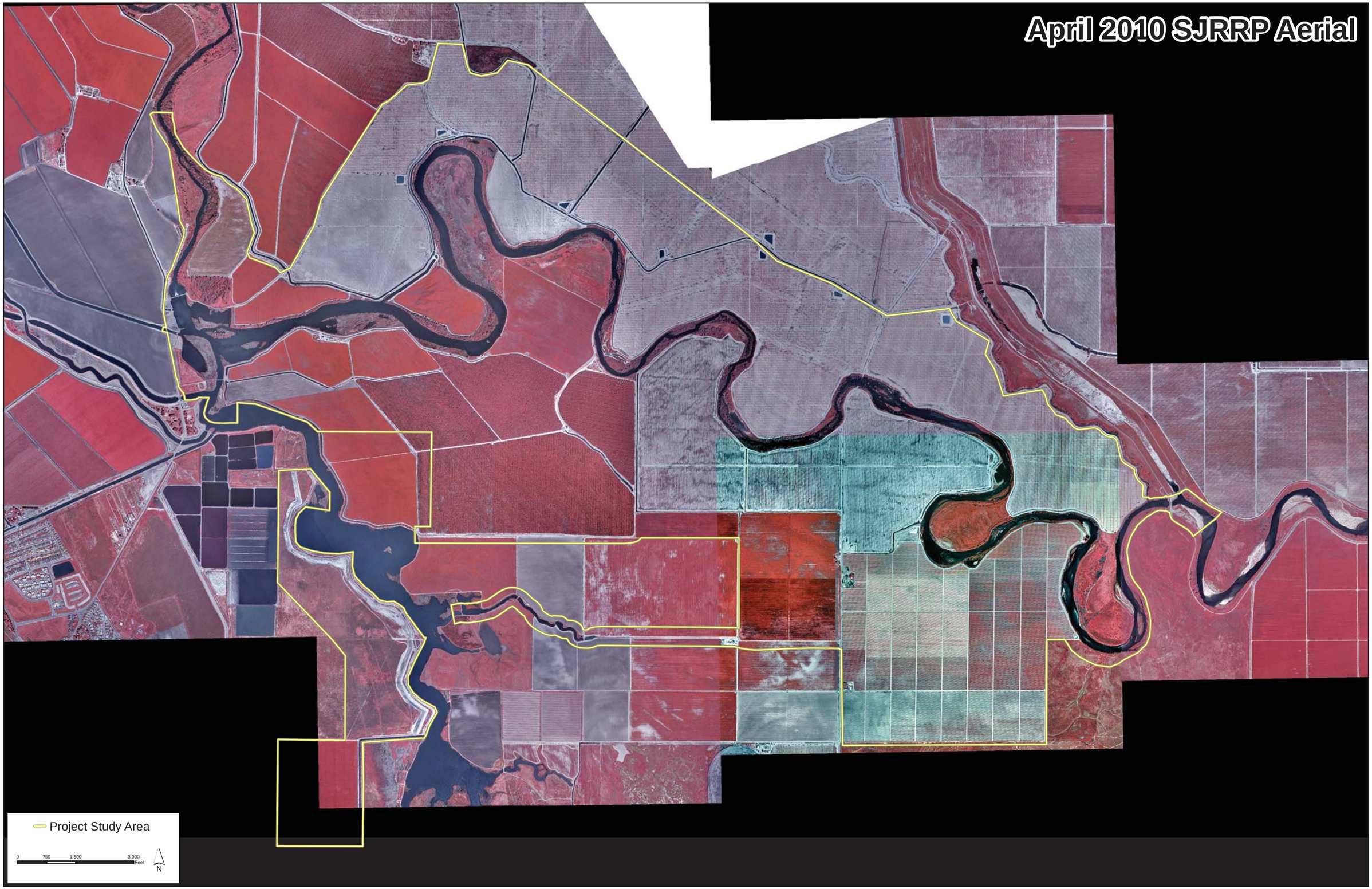
April 2010 SJRRP Aerial
Project Study Area
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3,000
Feet
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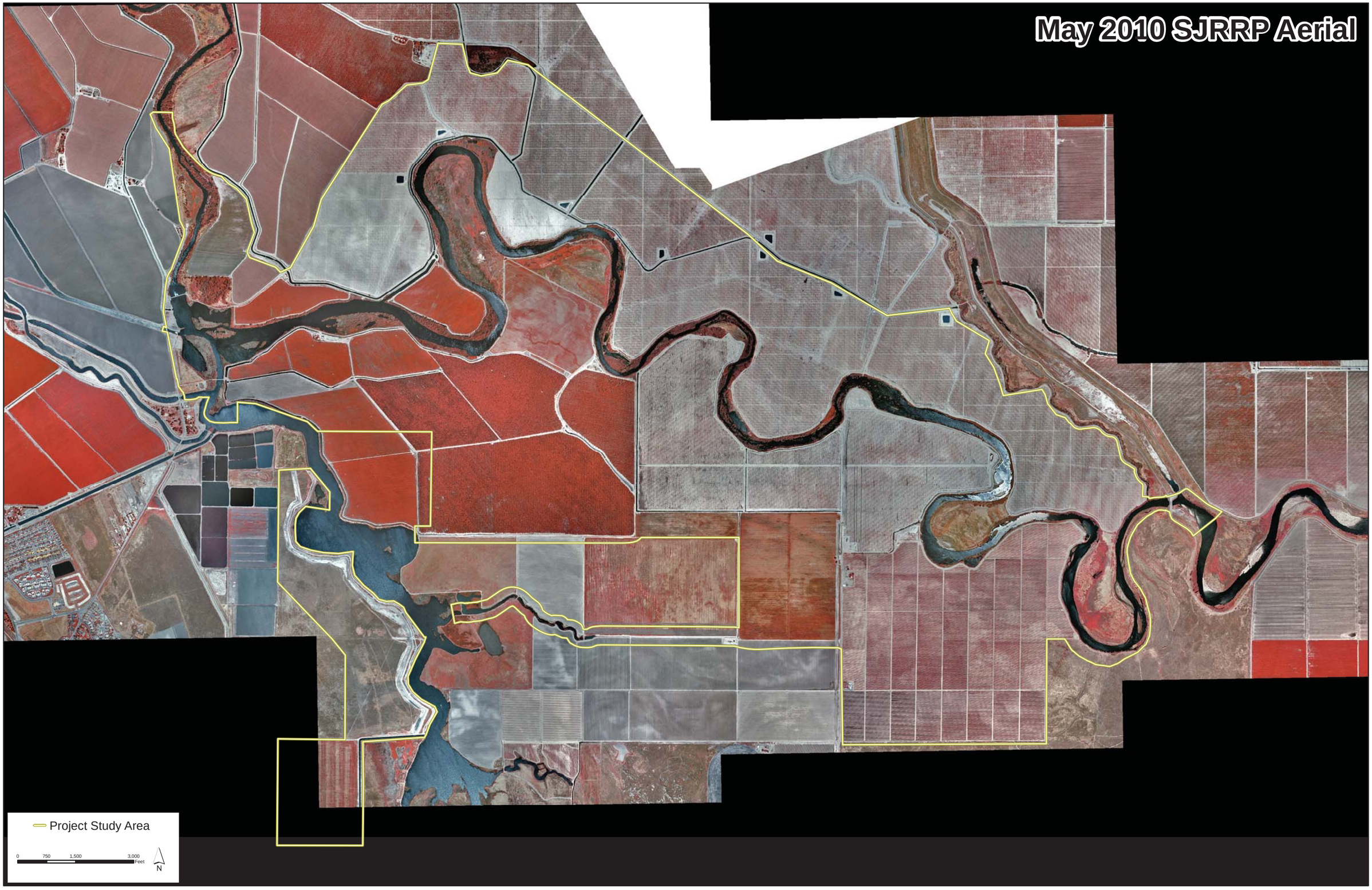
May 2010 SJRRP Aerial
Project Study Area
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3,000
Feet
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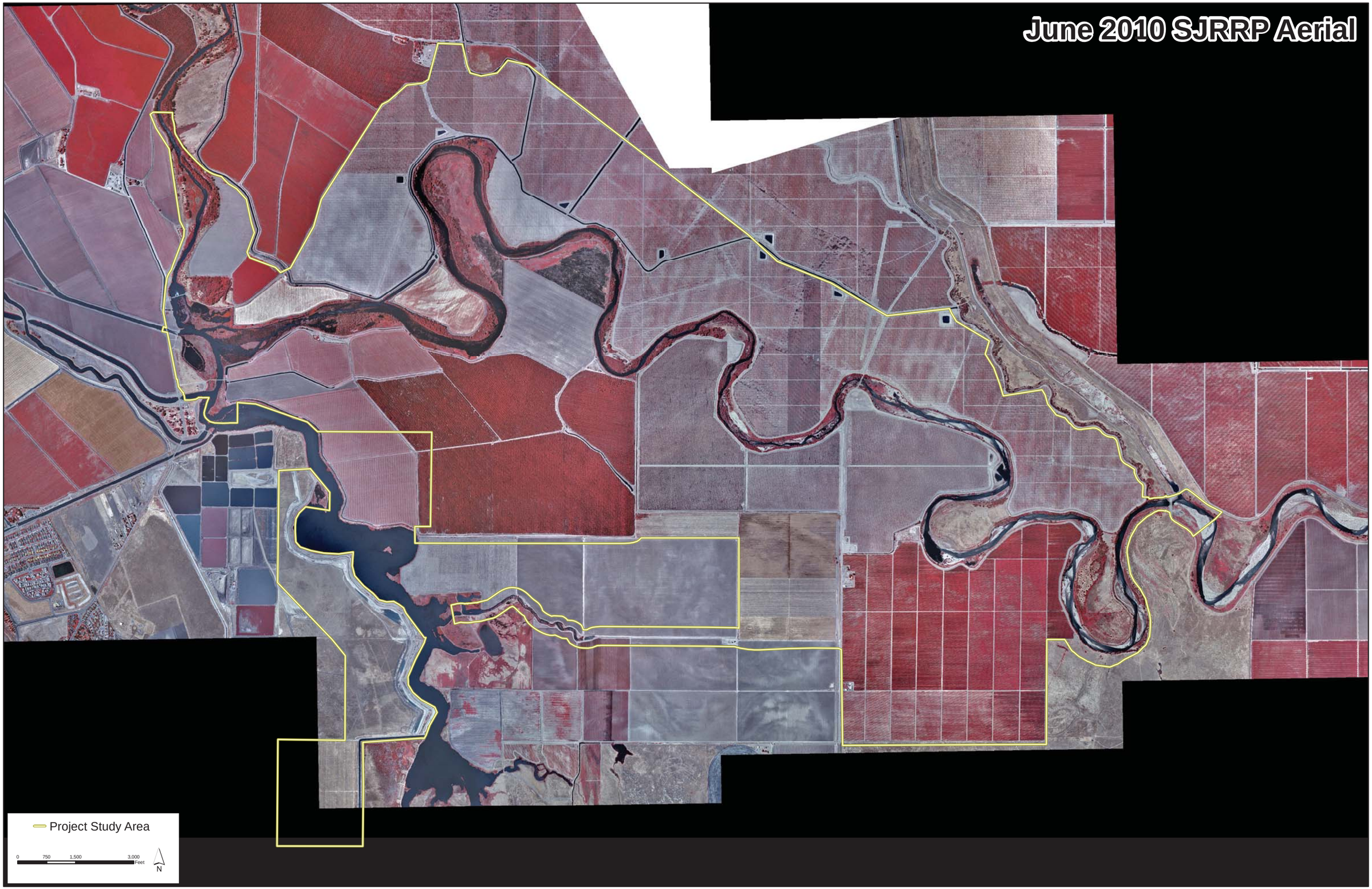
June 2010 SJRRP Aerial
Project Study Area
0
750
1,500
3,000
Feet
N

San Joaquin River Restoration Project Alternatives

San Joaquin River Restoration Project Alternatives

Mendota, CA 93640

Inquiry Number: 3196001.2

October 31, 2011

EDR Historical Topographic Map Report

EDR® Environmental Data Resources Inc

440 Wheelers Farms Road
Milford, CT 06461
800.352.0050
www.edrnet.com

EDR Historical Topographic Map Report

Environmental Data Resources, Inc.s (EDR) Historical Topographic Map Report is designed to assist professionals in evaluating potential liability on a target property resulting from past activities. EDRs Historical Topographic Map Report includes a search of a collection of public and private color historical topographic maps, dating back to the early 1900s.

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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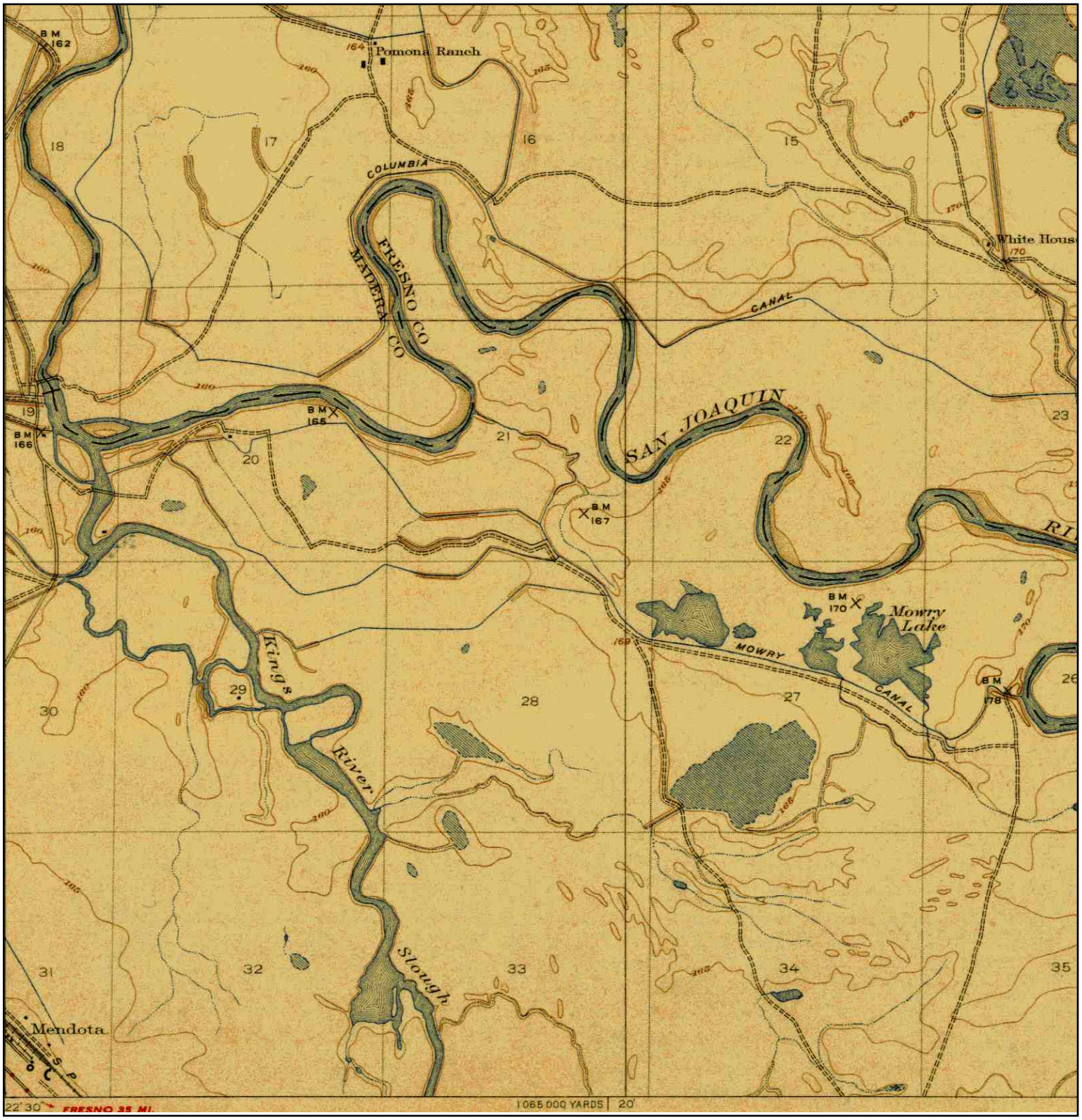
Historical Topographic Map

N	TARGET QUAD NAME: MENDOTA=MENDOTA DAM MAP YEAR: 1924 SERIES: 7.5 SCALE: 1:31680	SITE NAME: San Joaquin River Restoration Project Alternatives ADDRESS: San Joaquin River Restoration Project Alternatives Mendota, CA 93640 LAT/LONG: 36.7737 / -120.3304	CLIENT: URS Corporation CONTACT: Joe Morgan INQUIRY#: 3196001.2 RESEARCH DATE: 10/31/2011

Historical Topographic Map



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Historical Topographic Map

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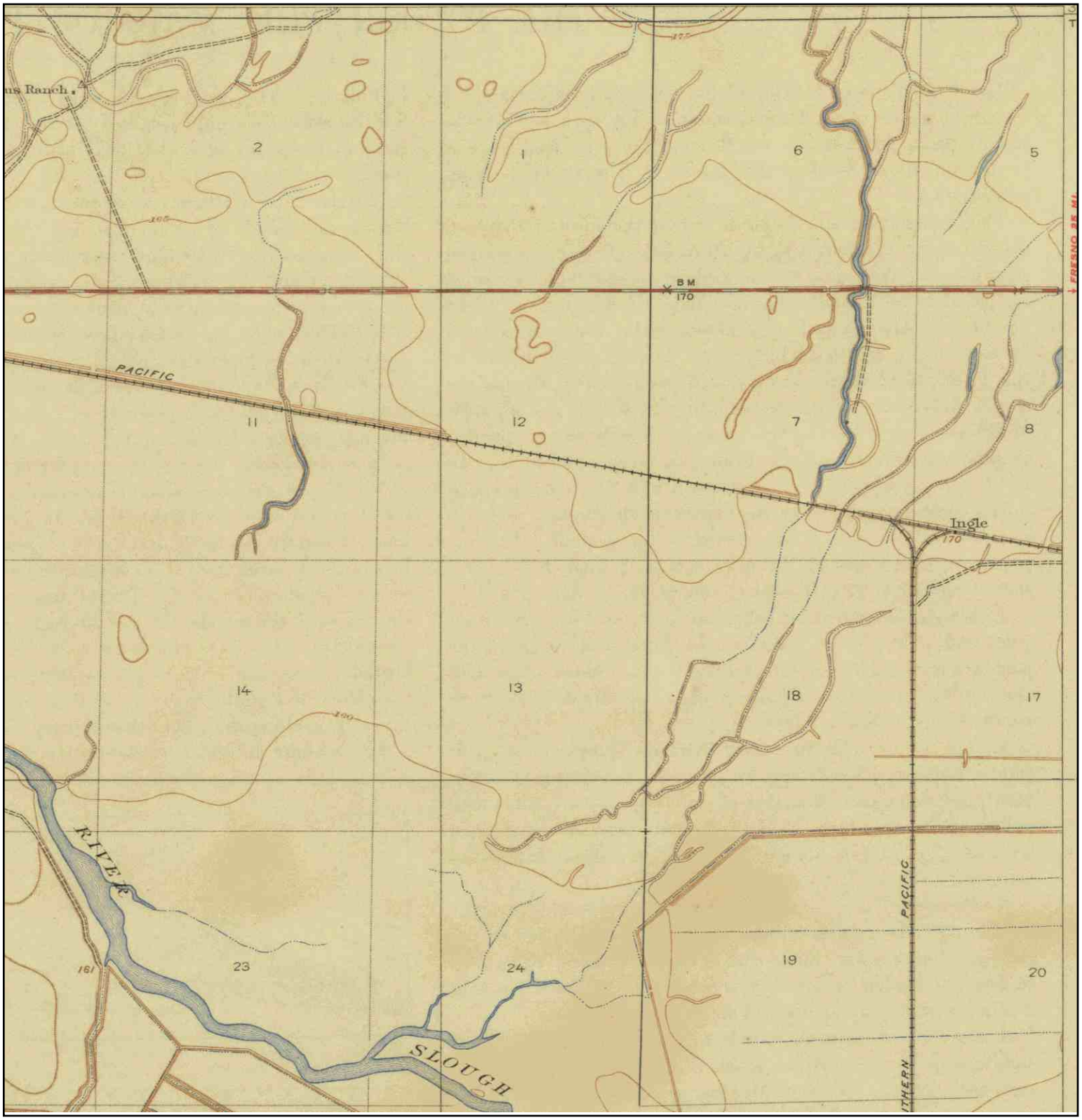

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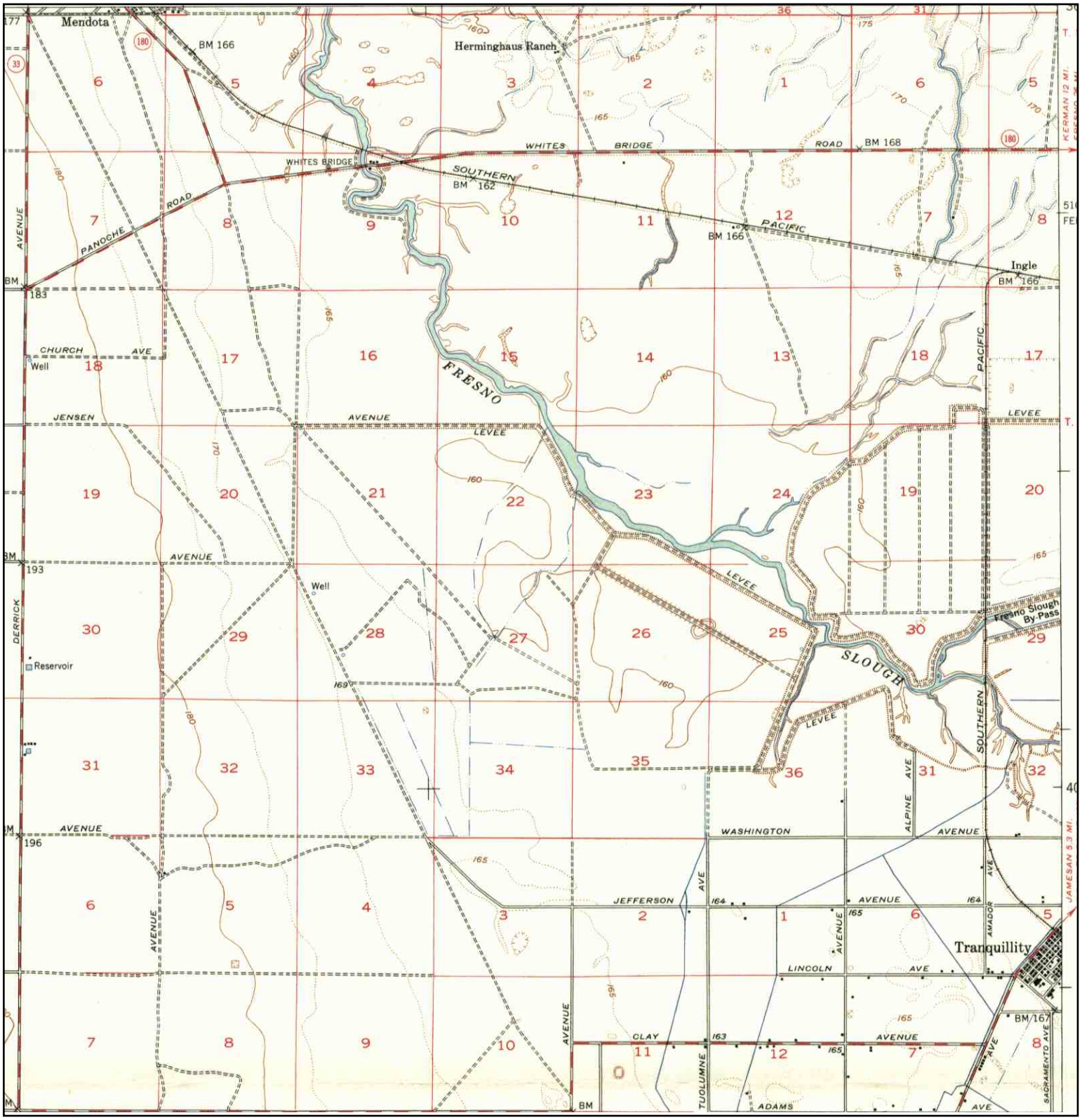

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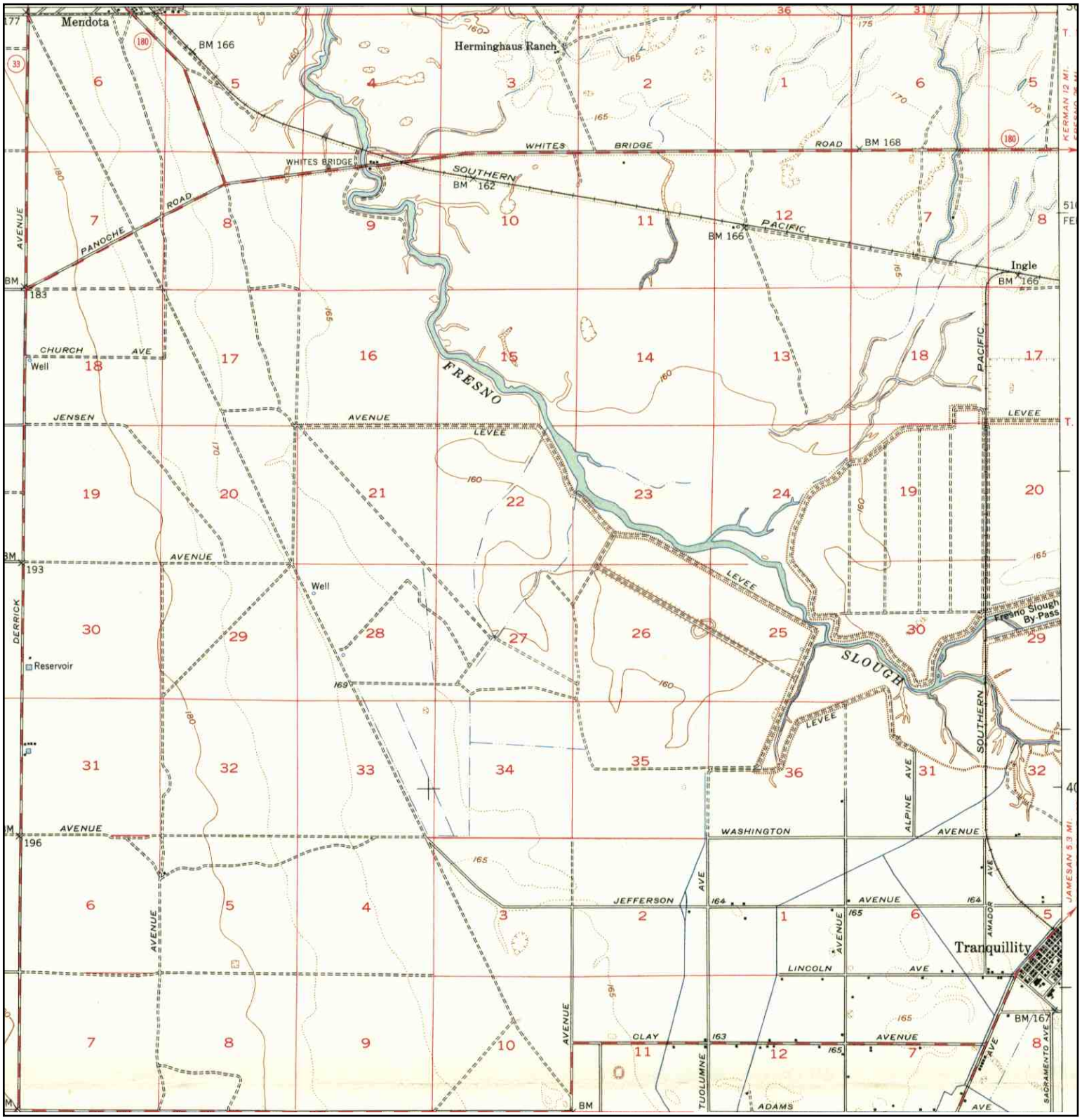
Historical Topographic Map



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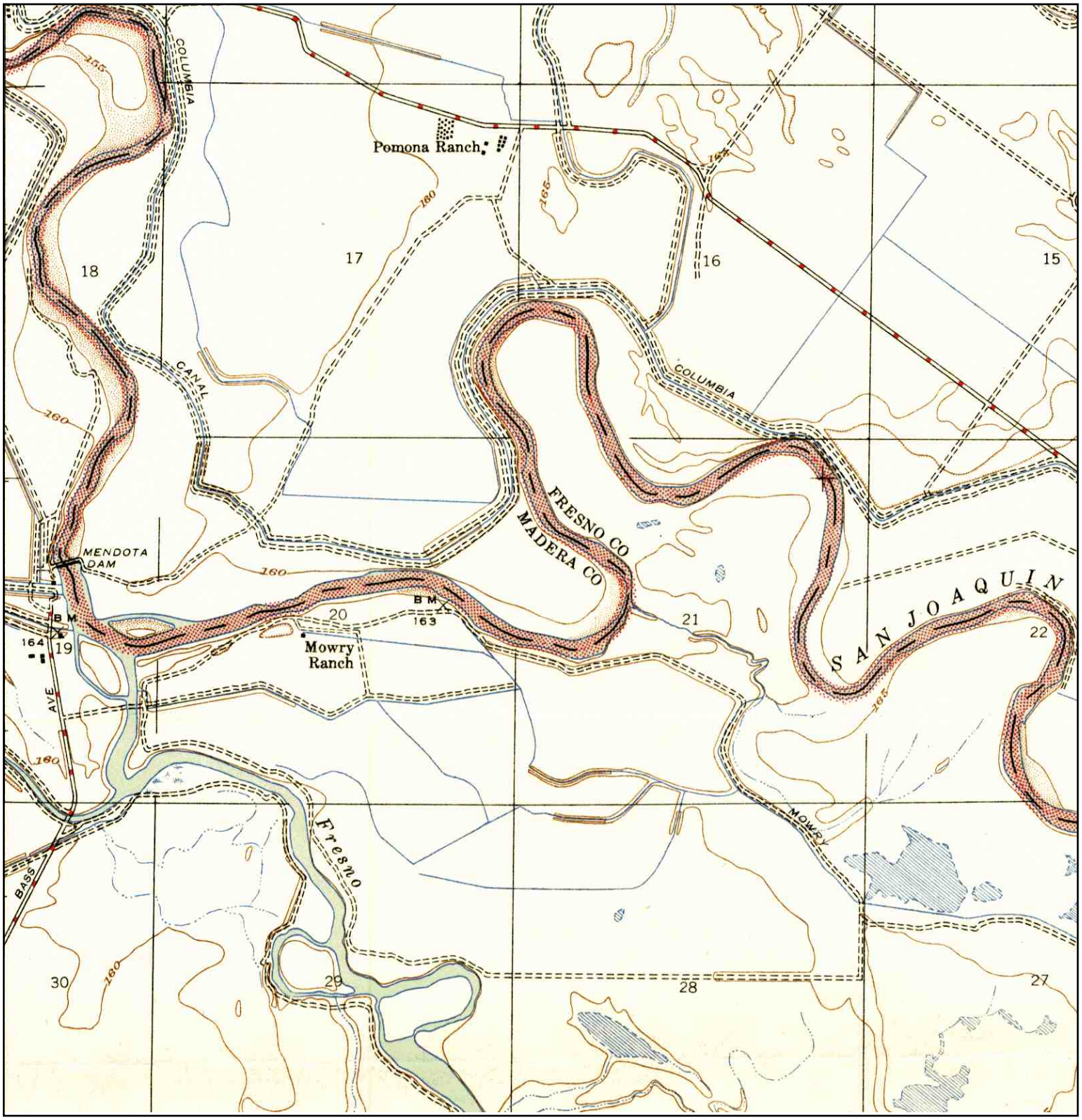

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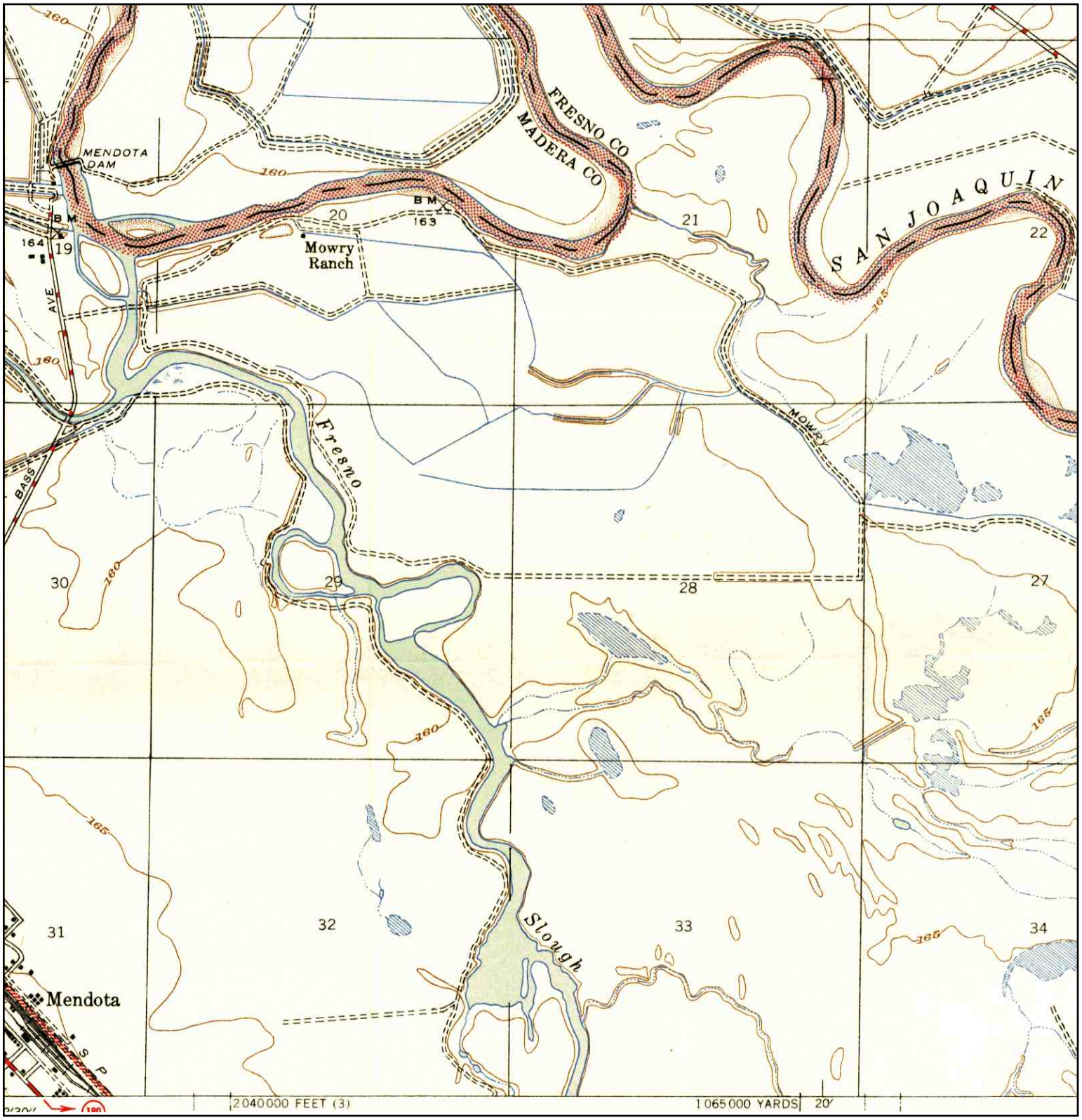

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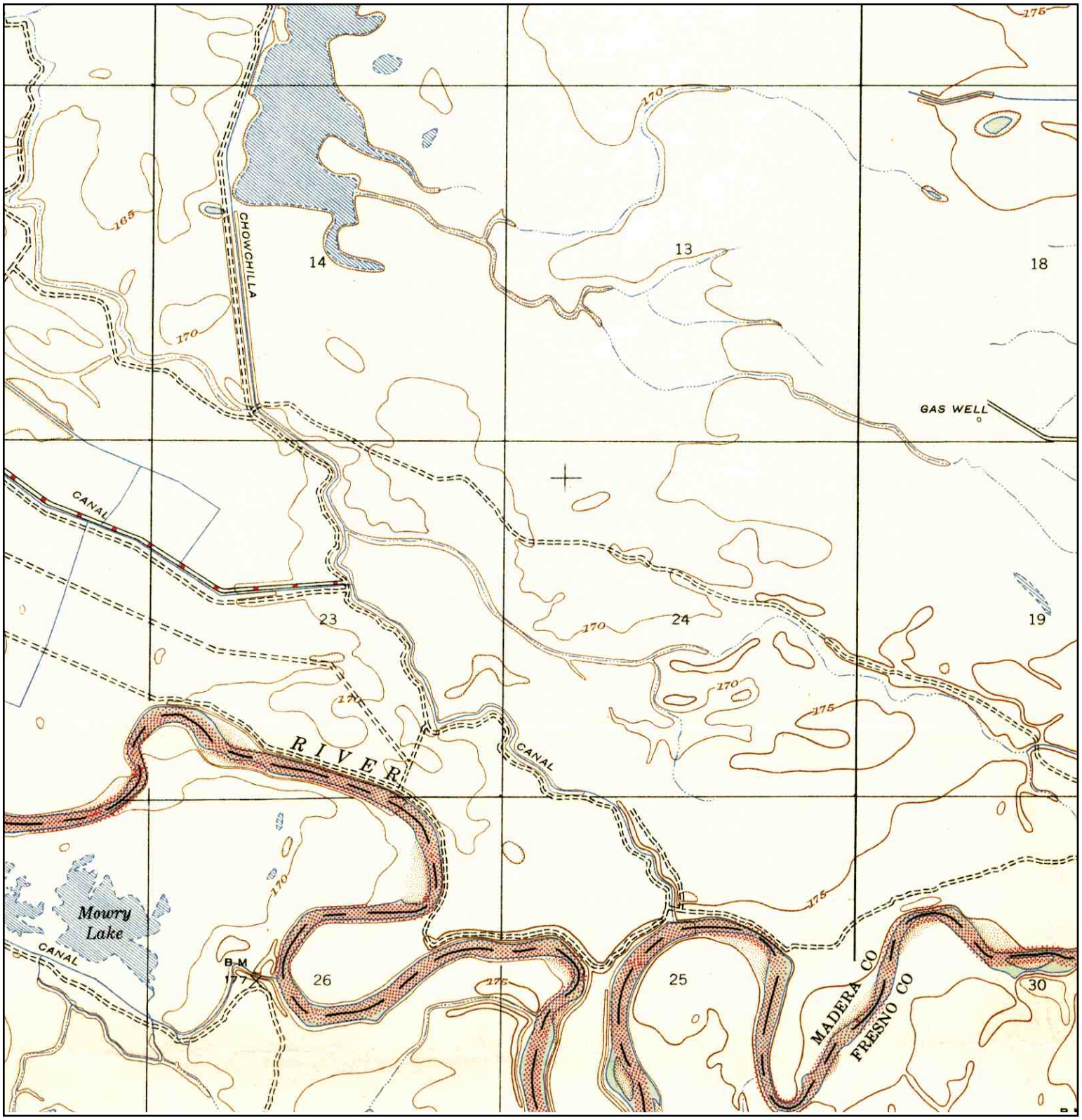

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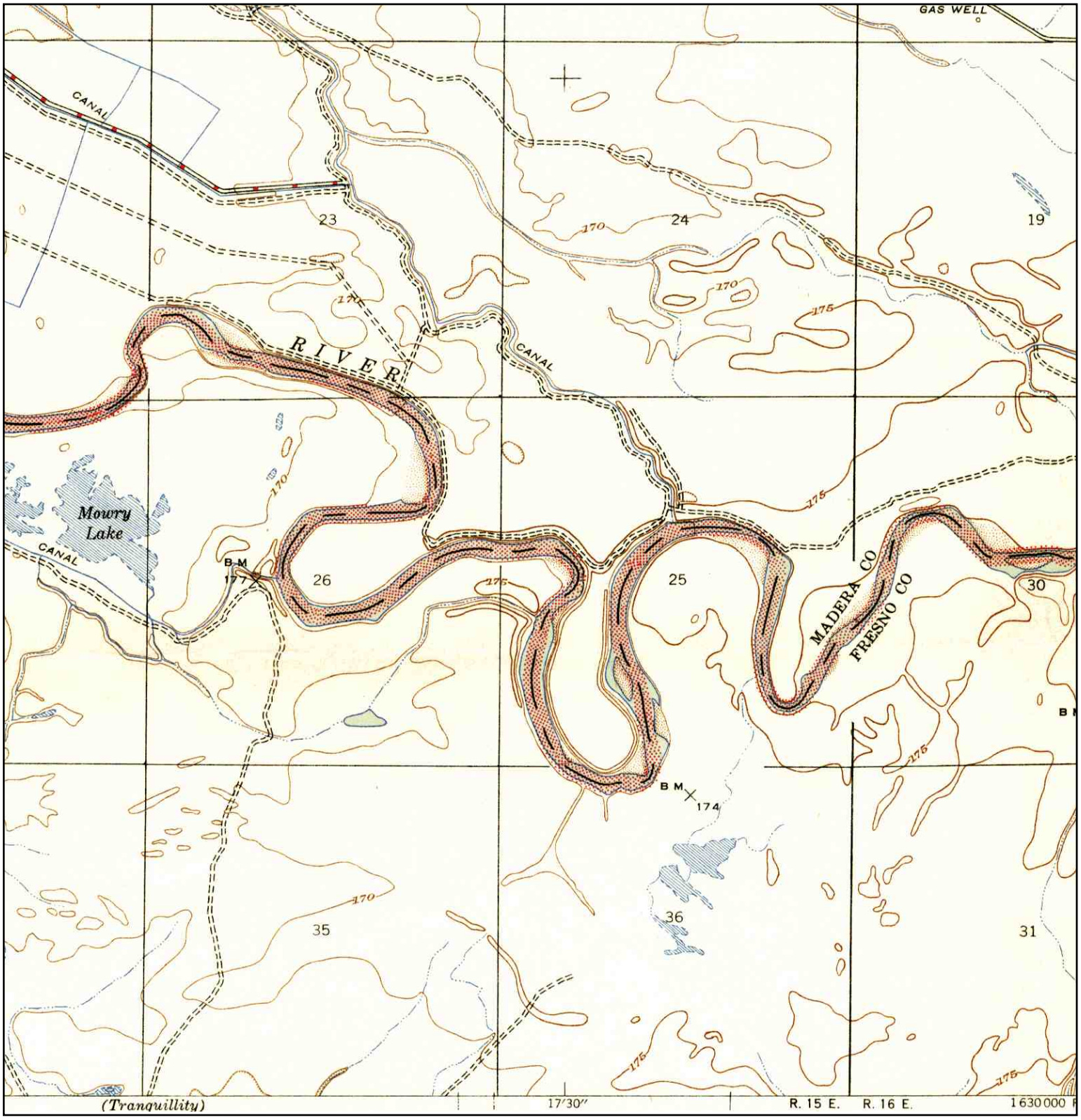

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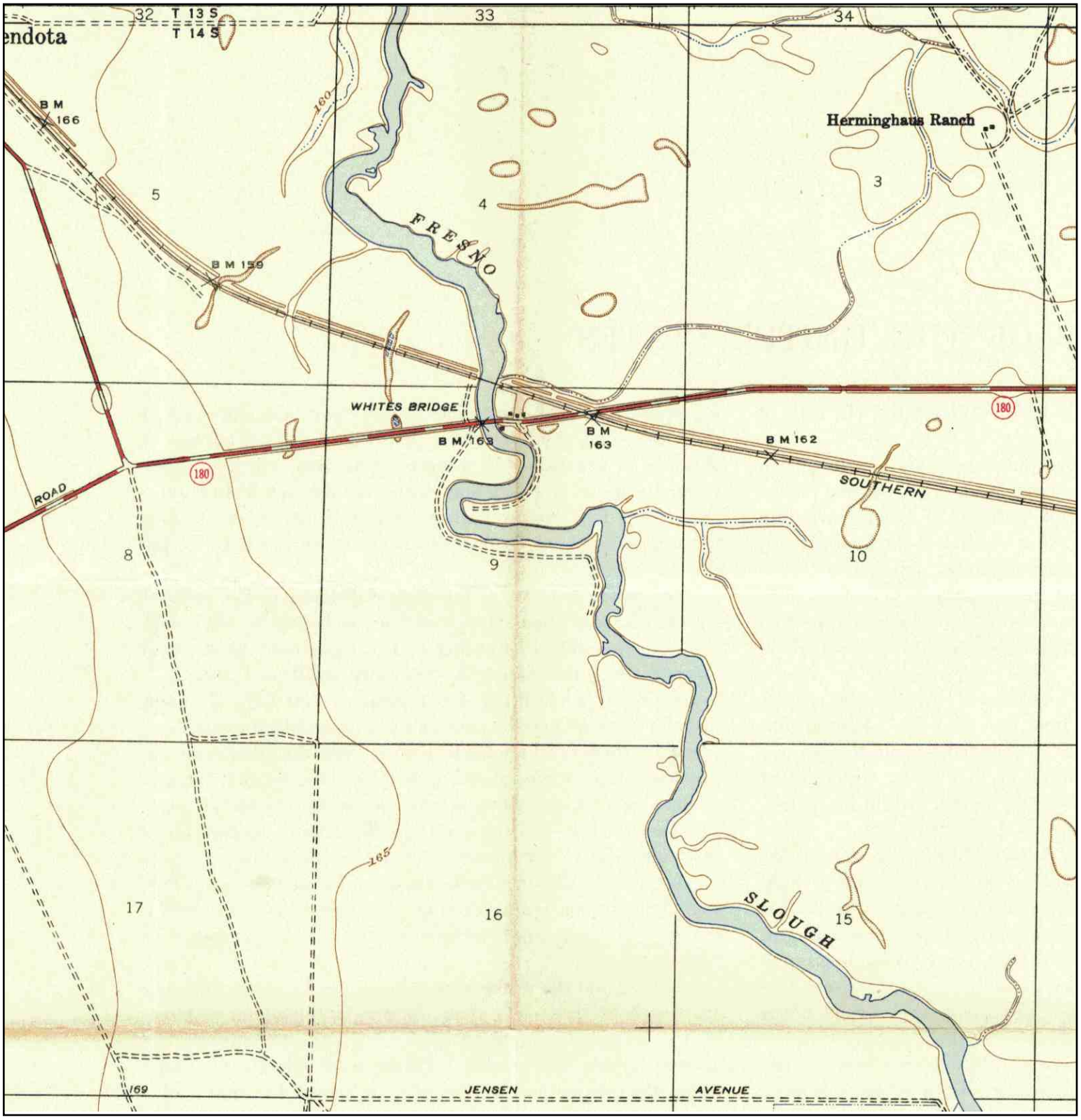

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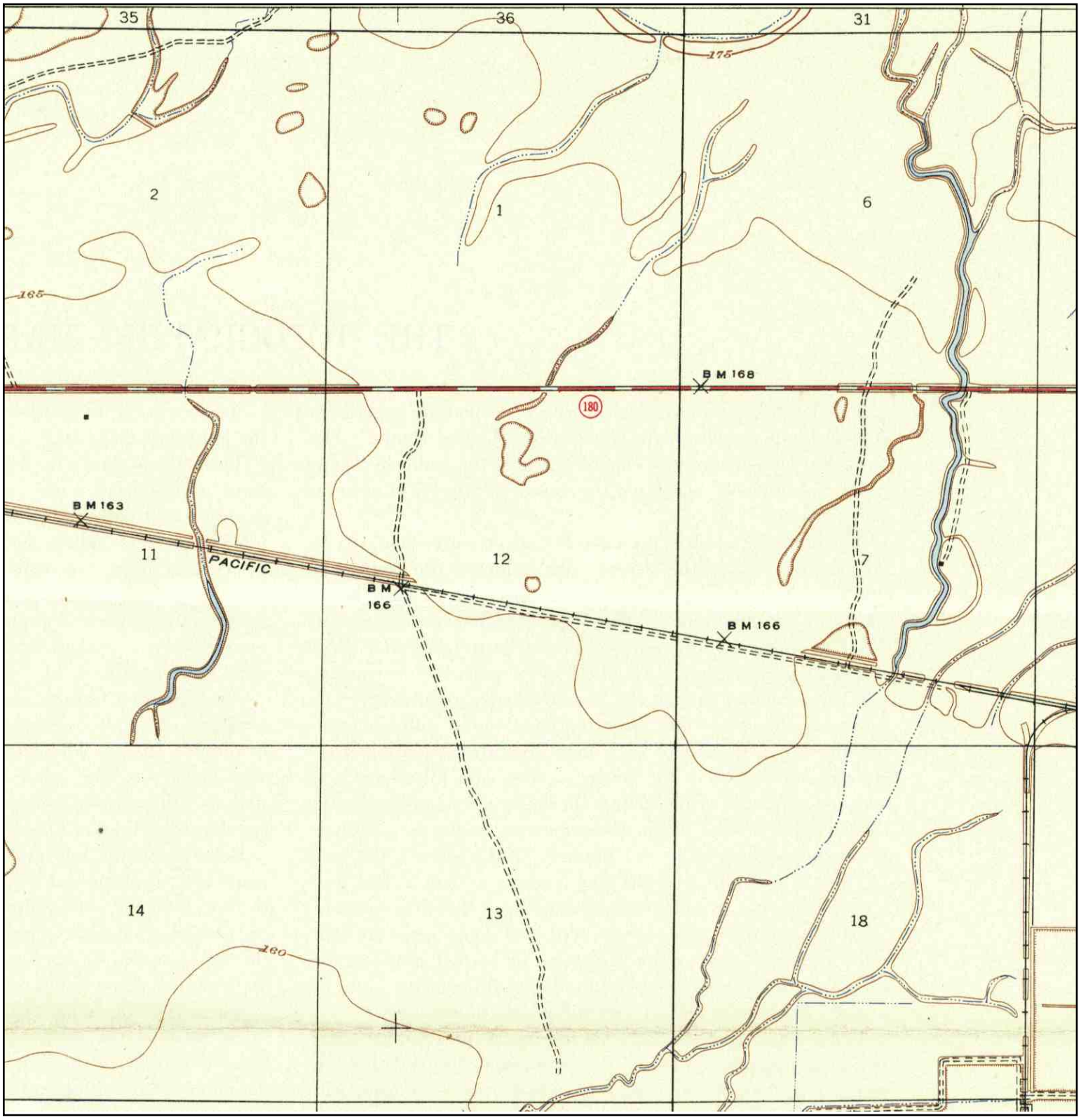

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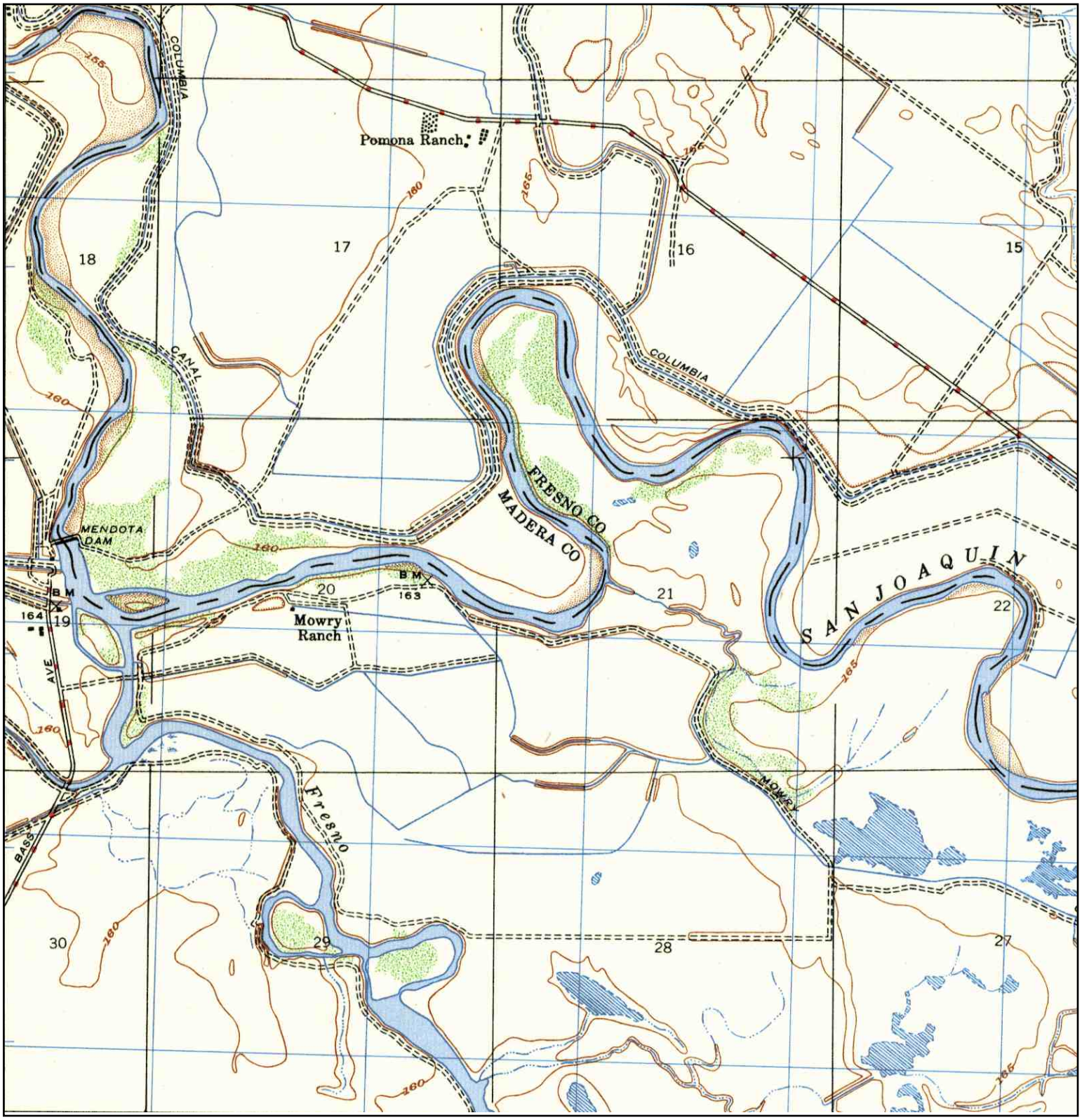

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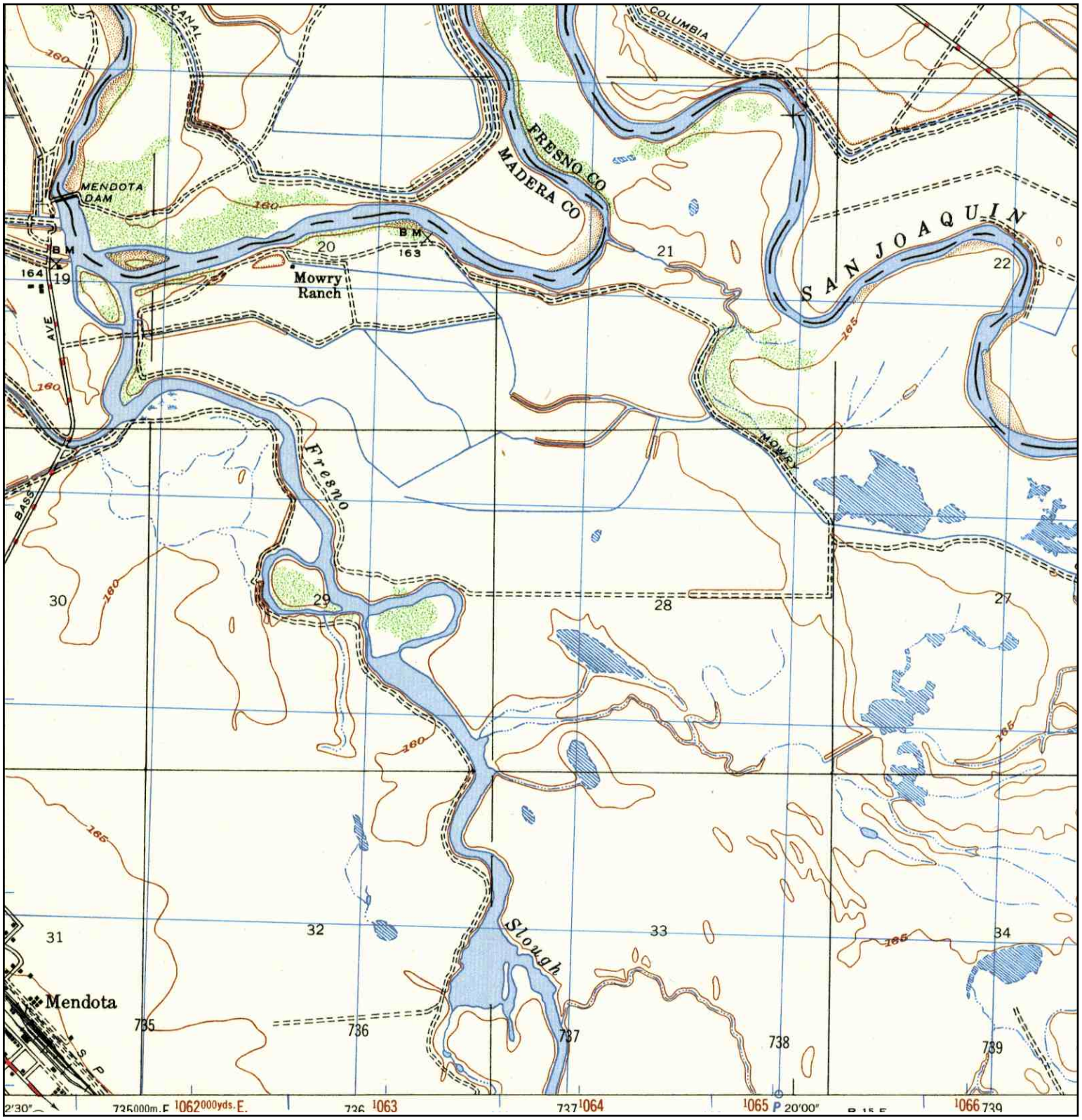

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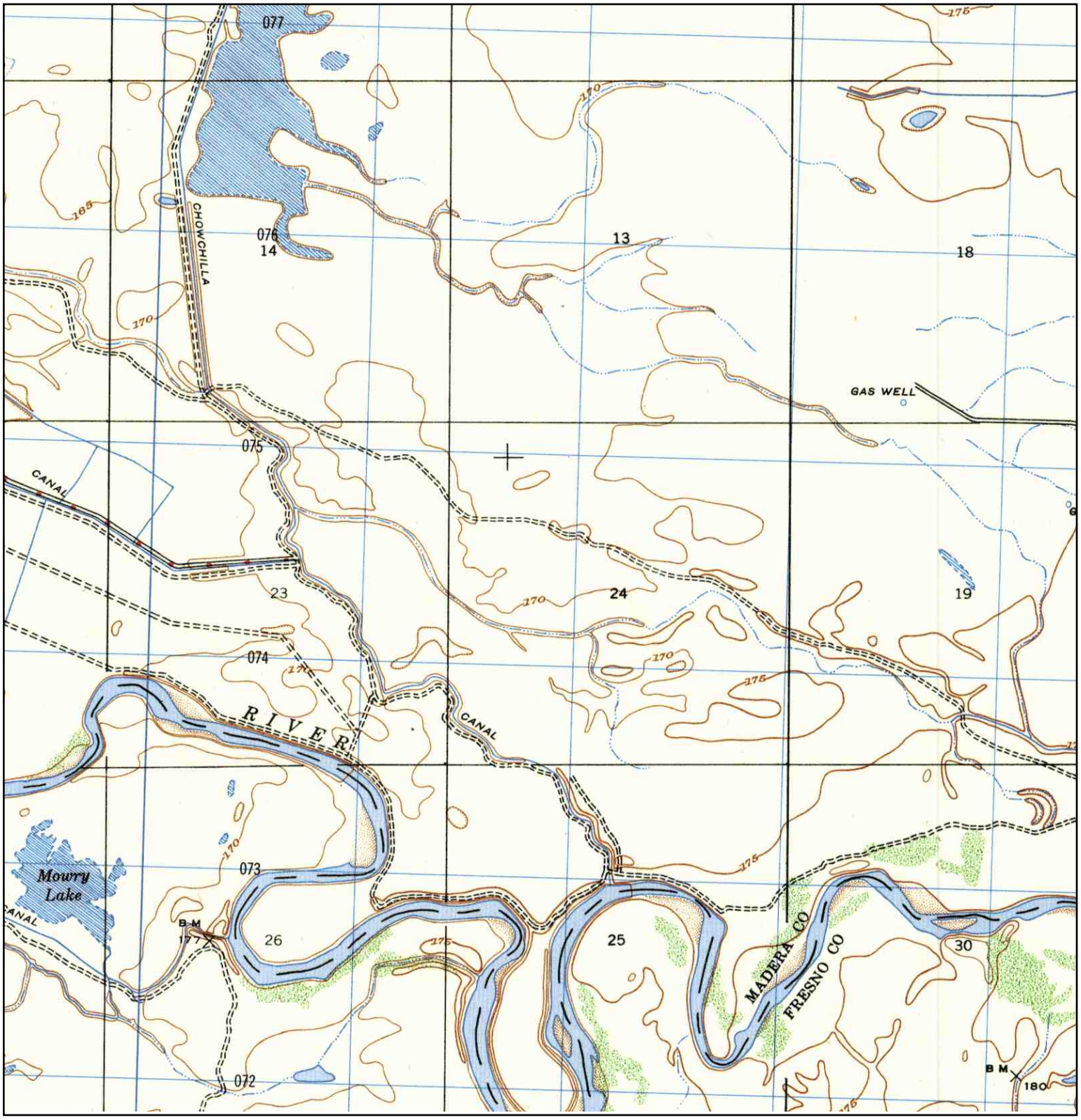

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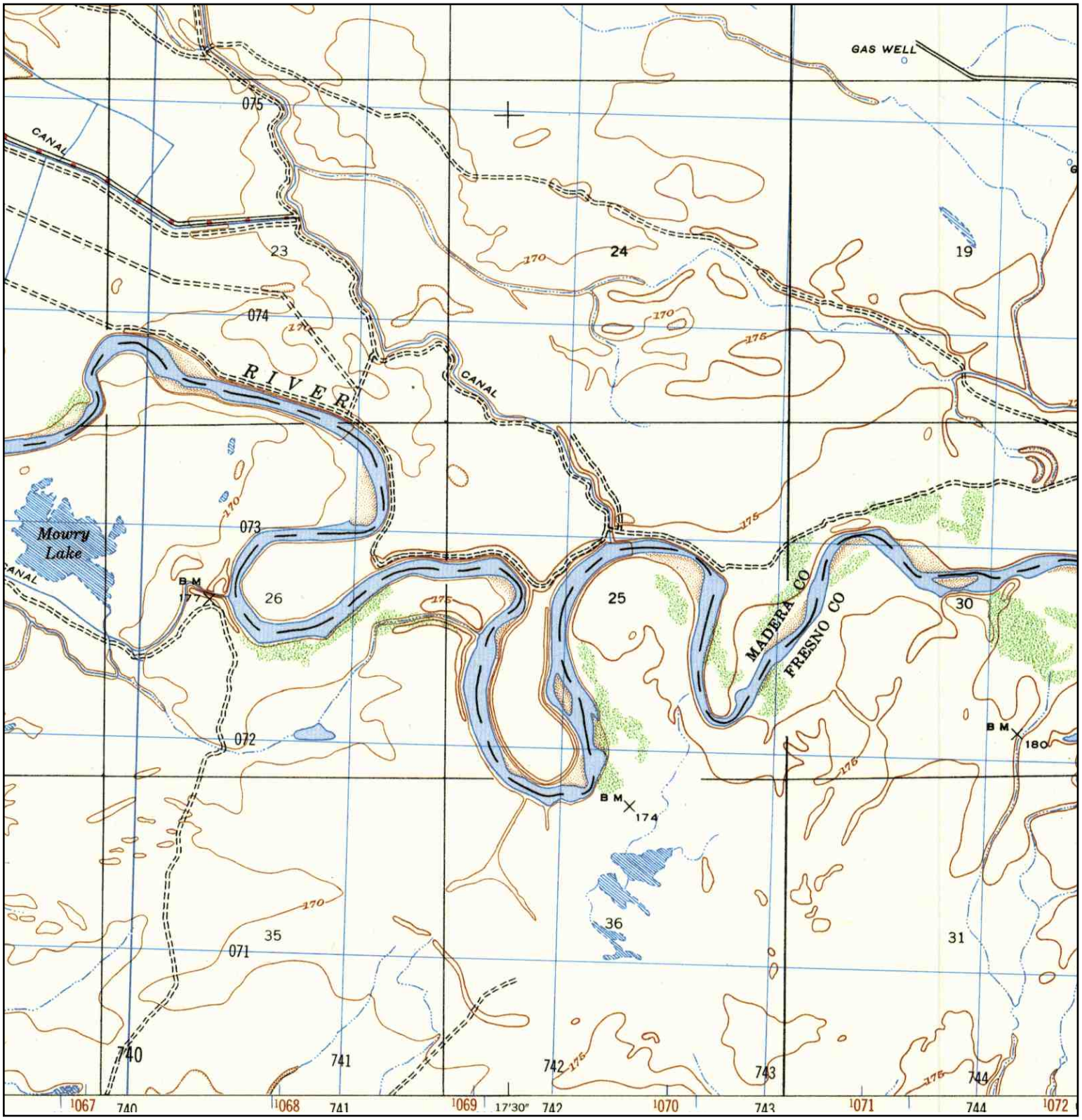

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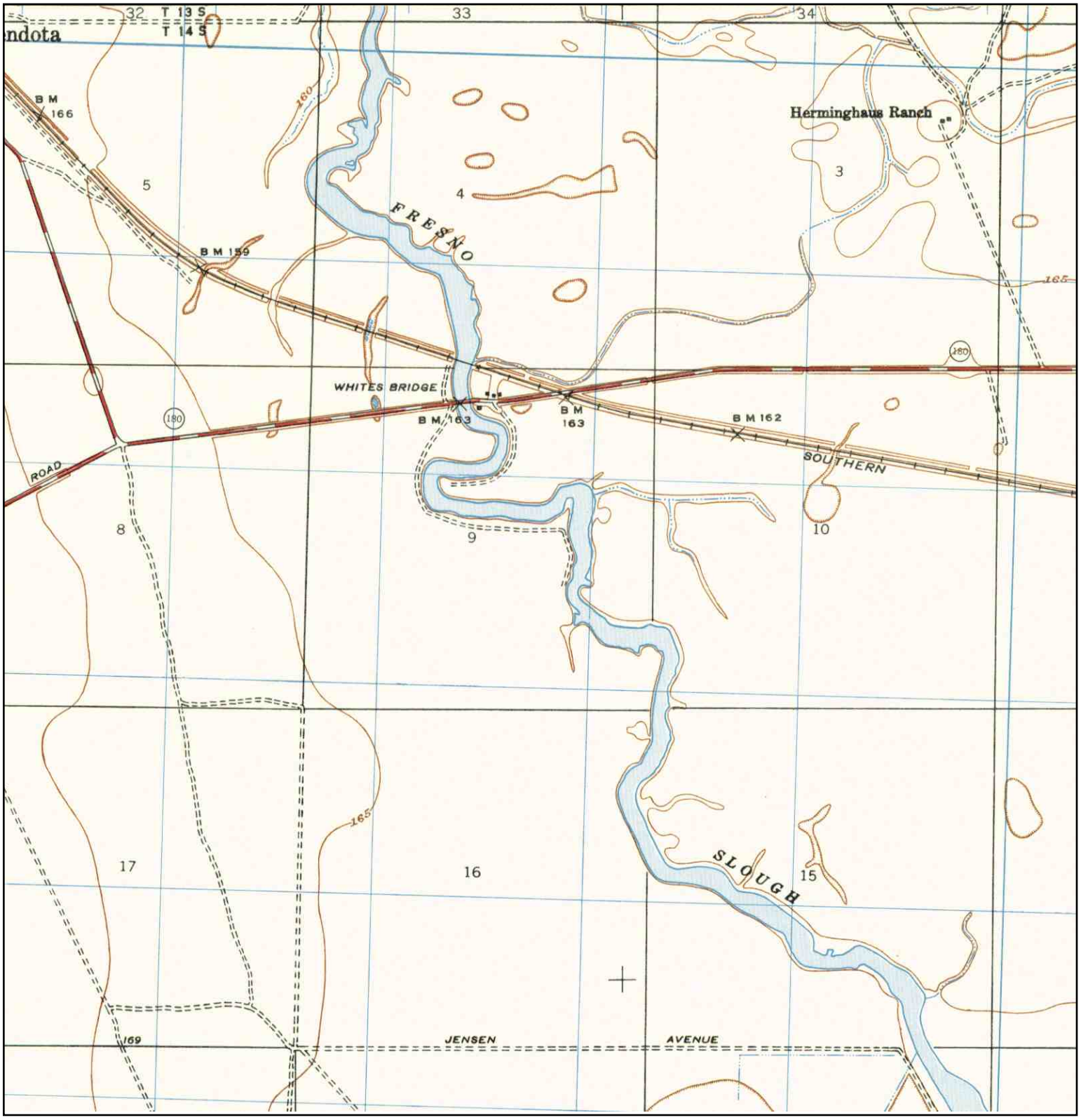

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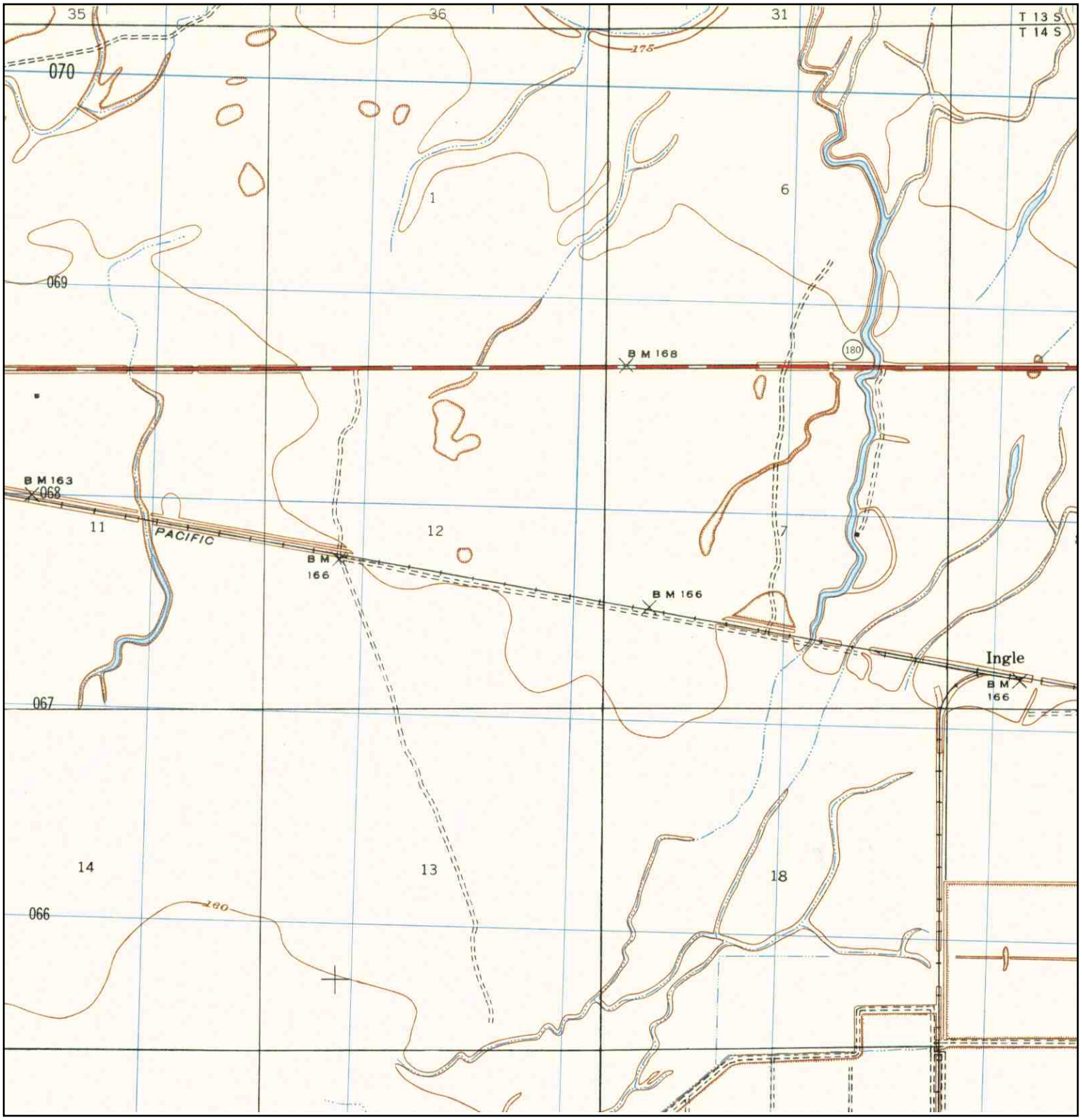

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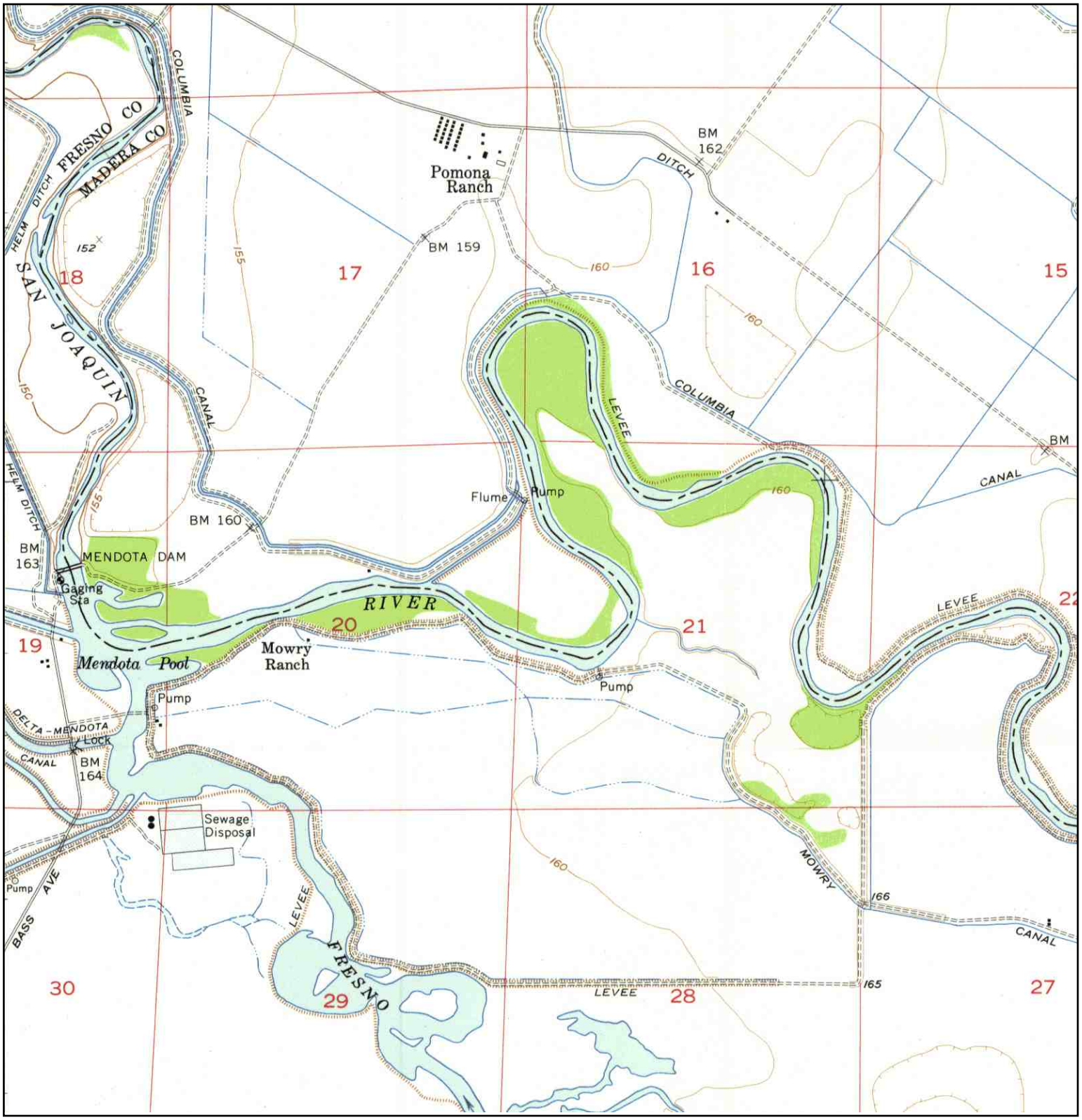

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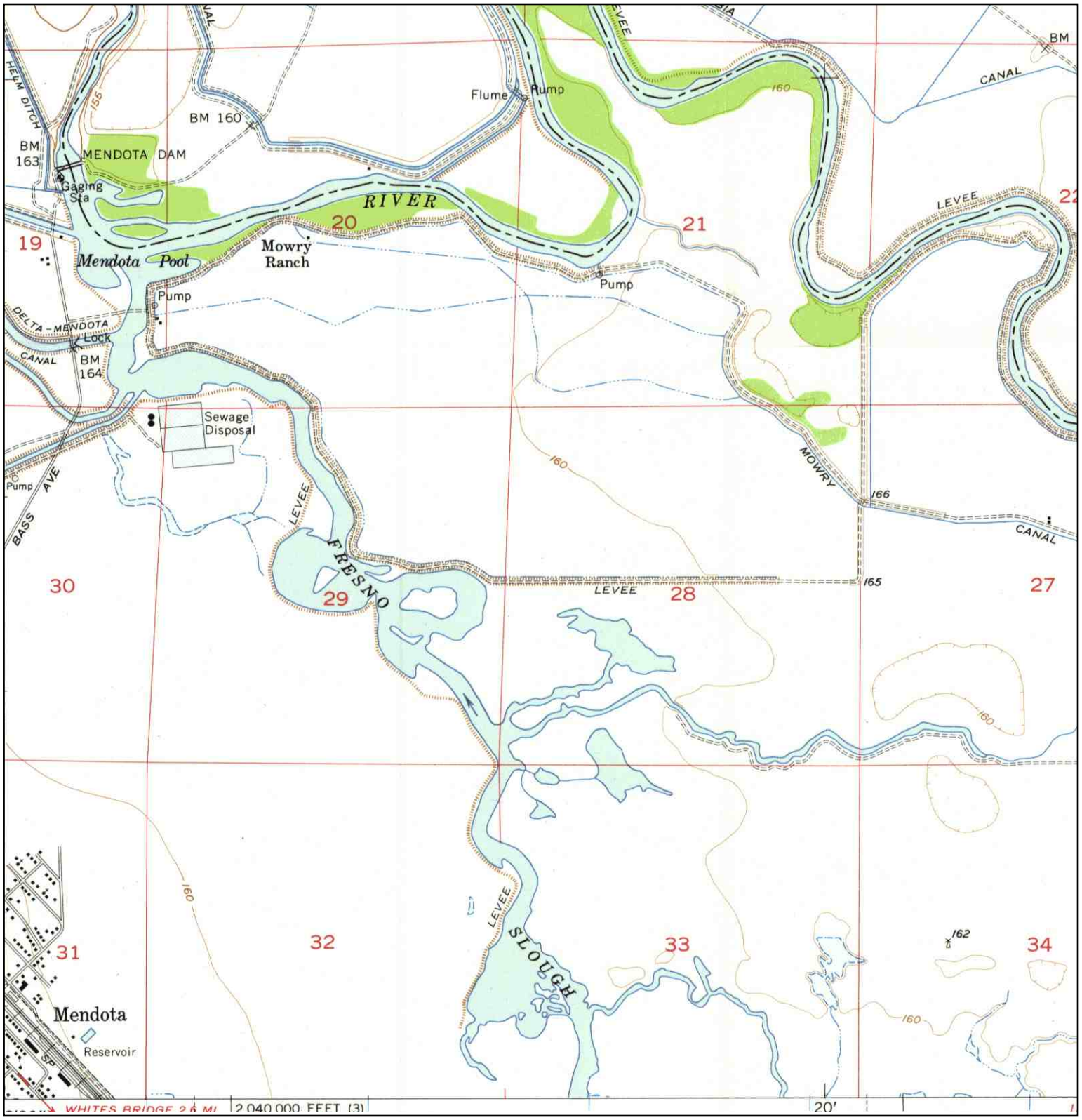

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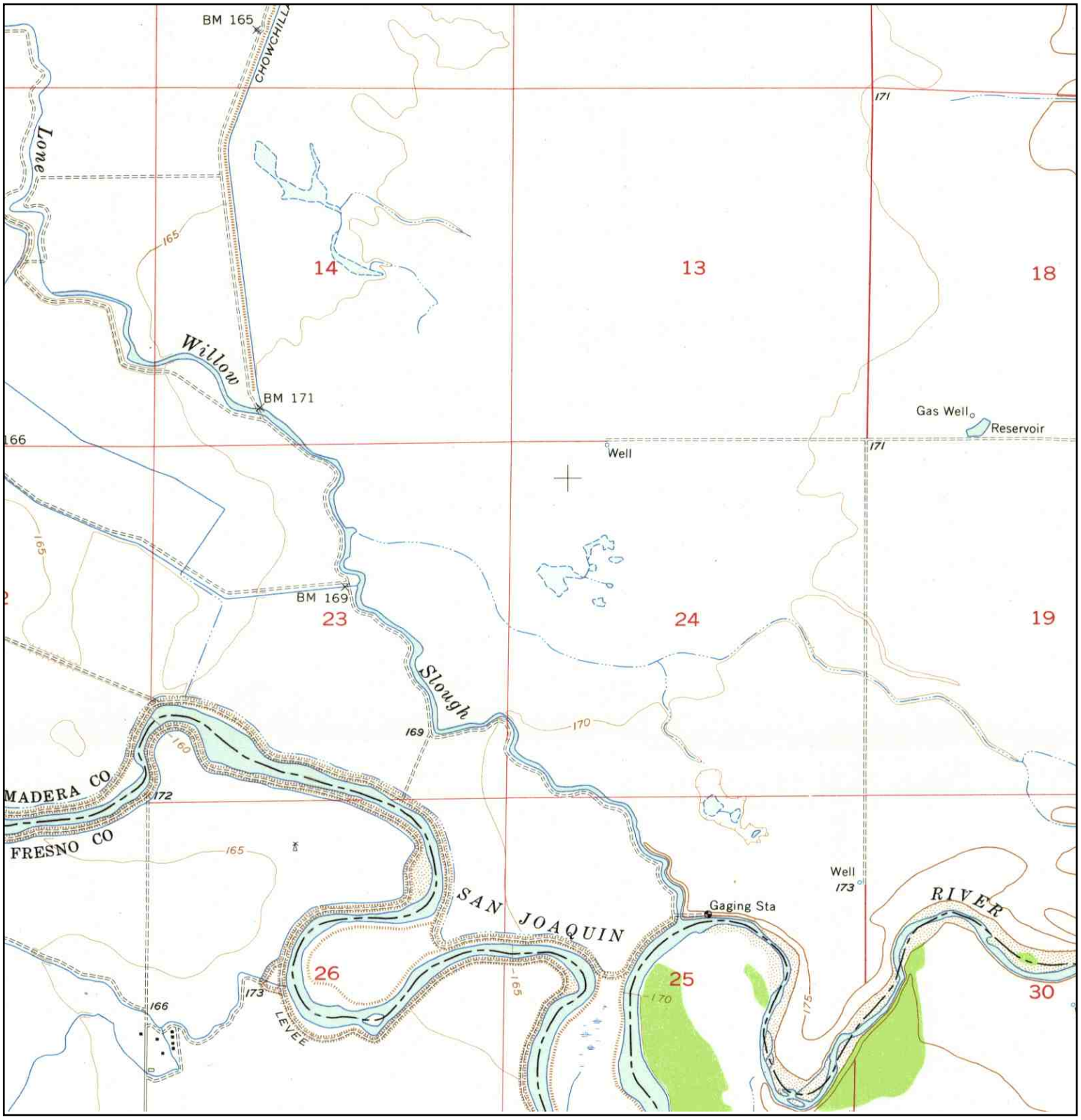

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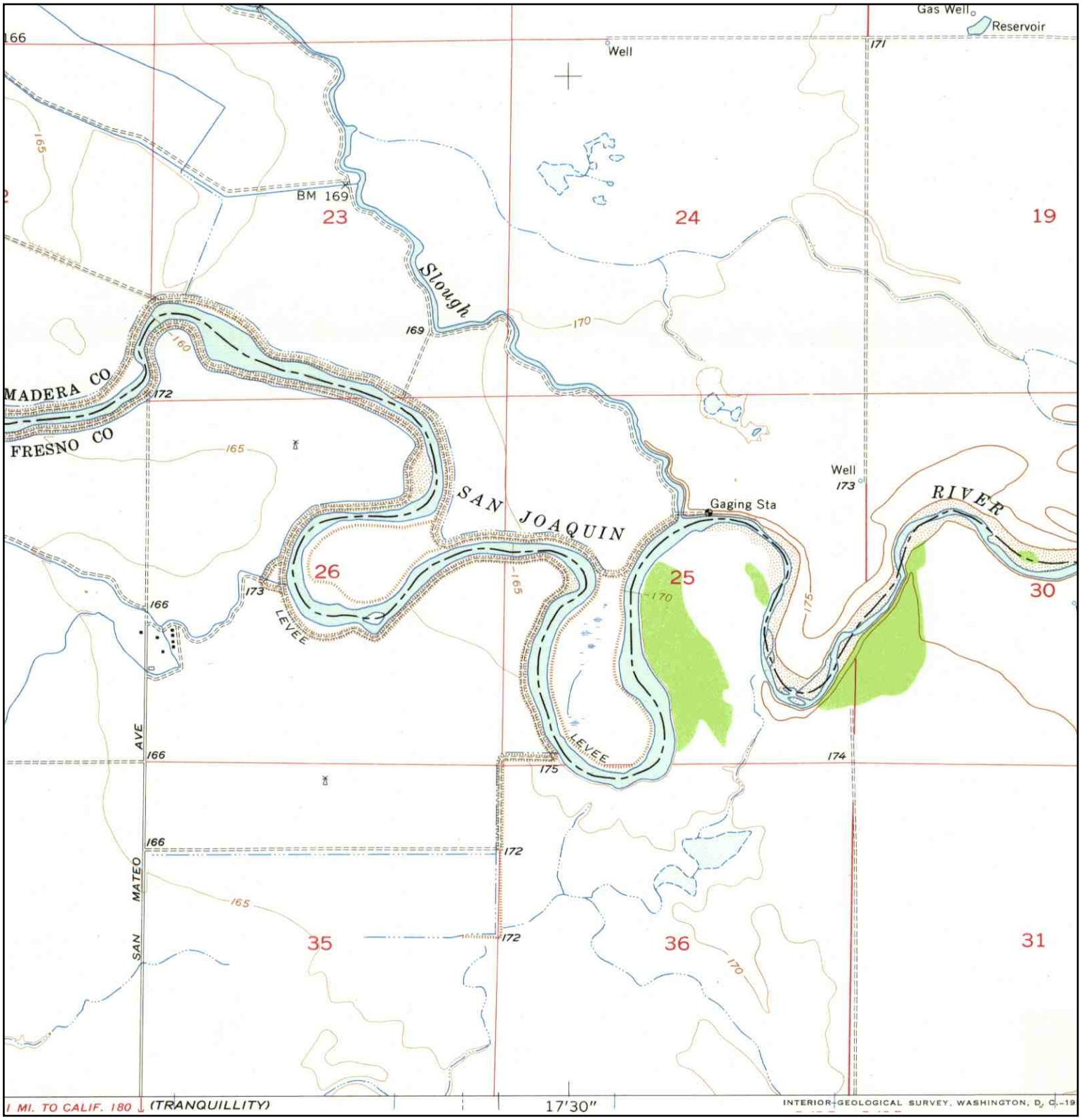

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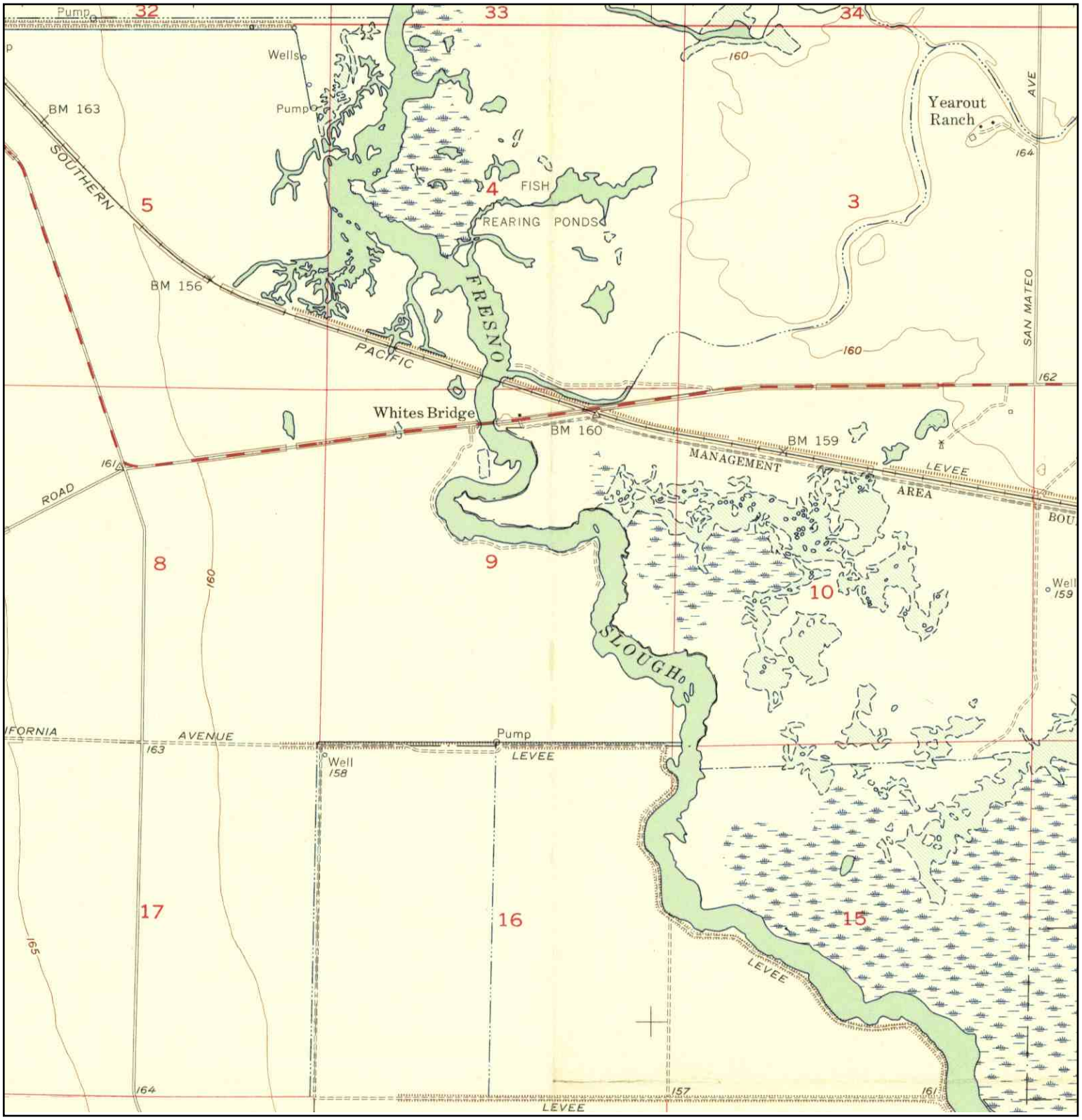

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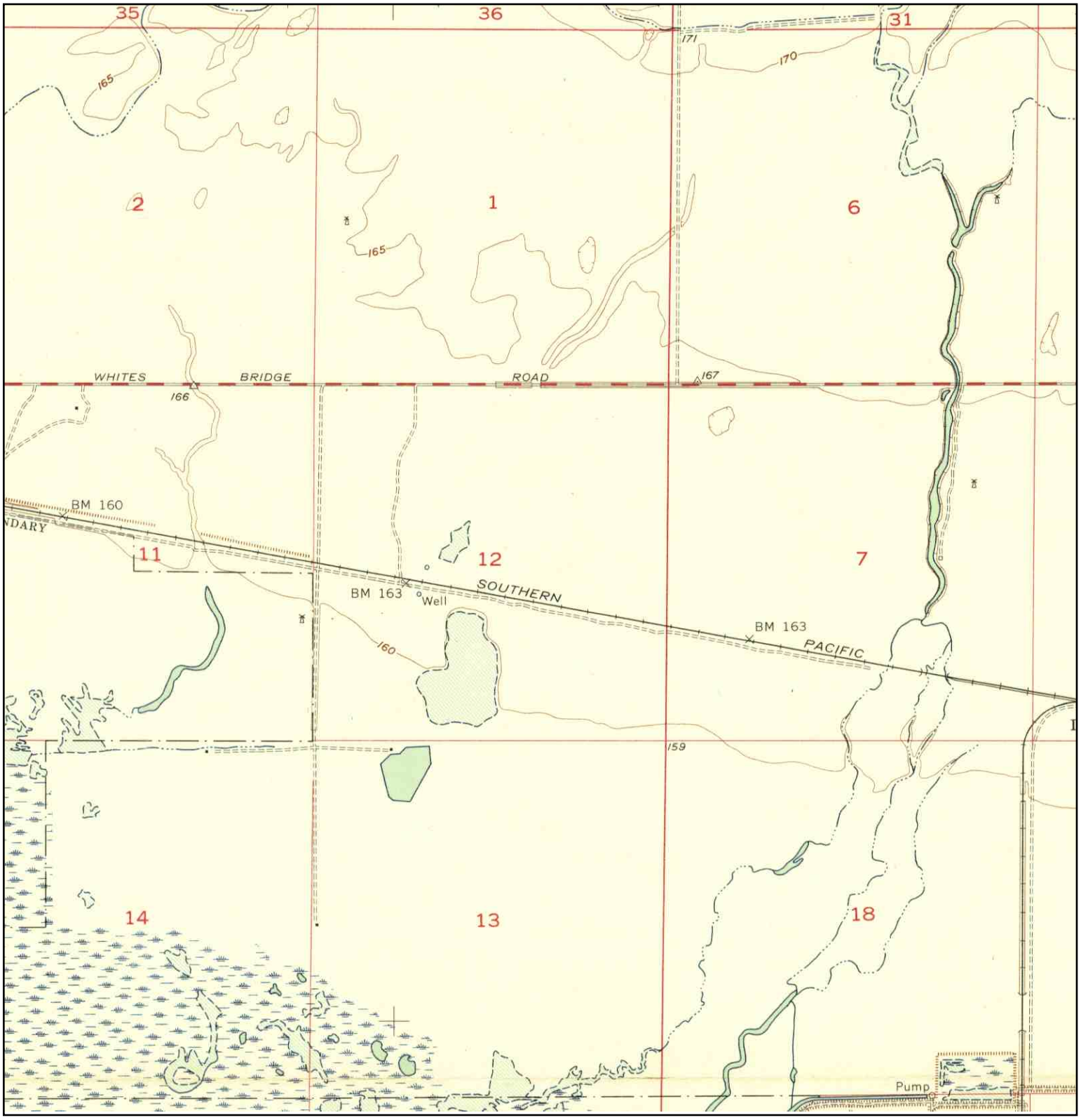

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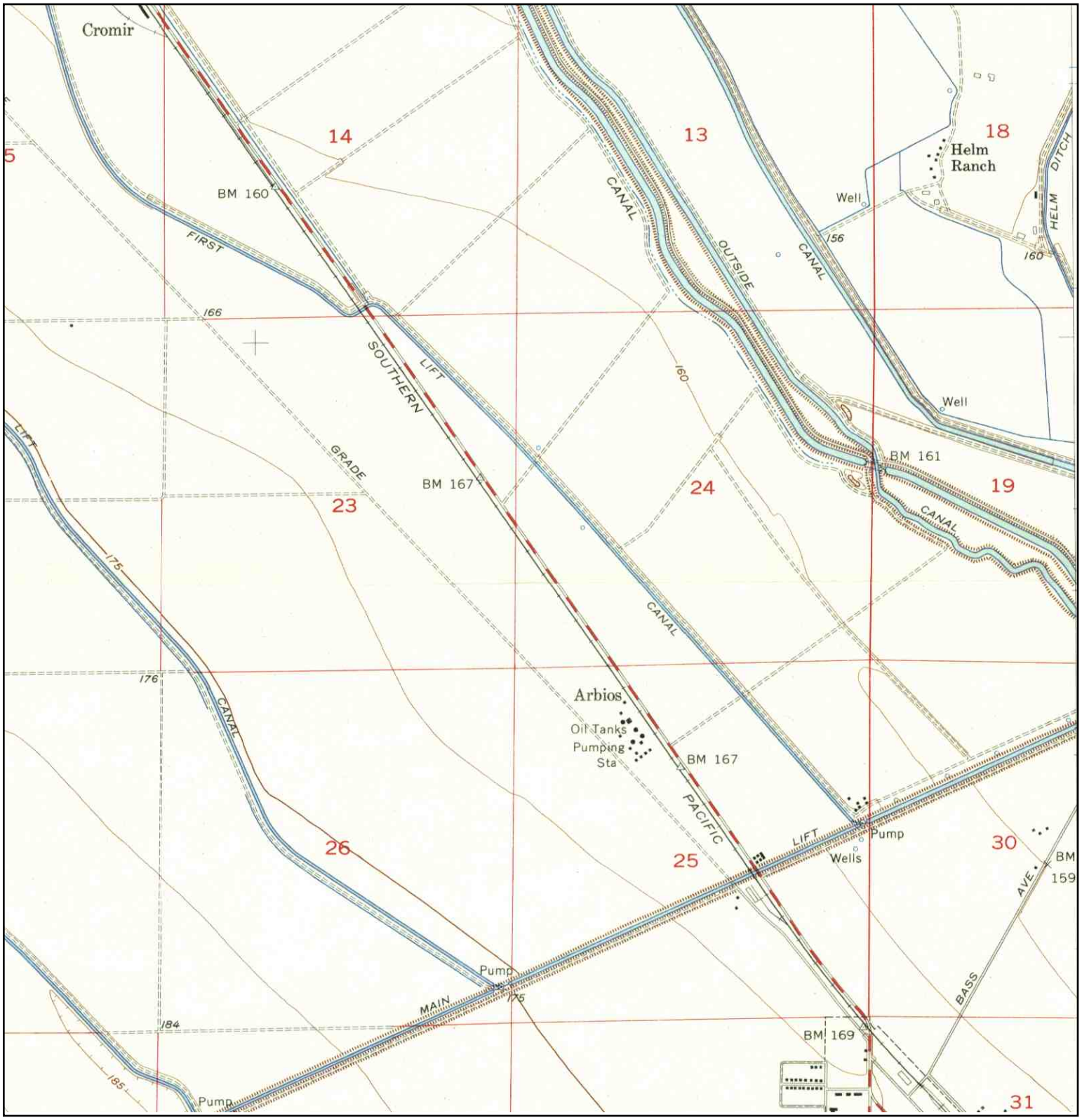

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Historical Topographic Map

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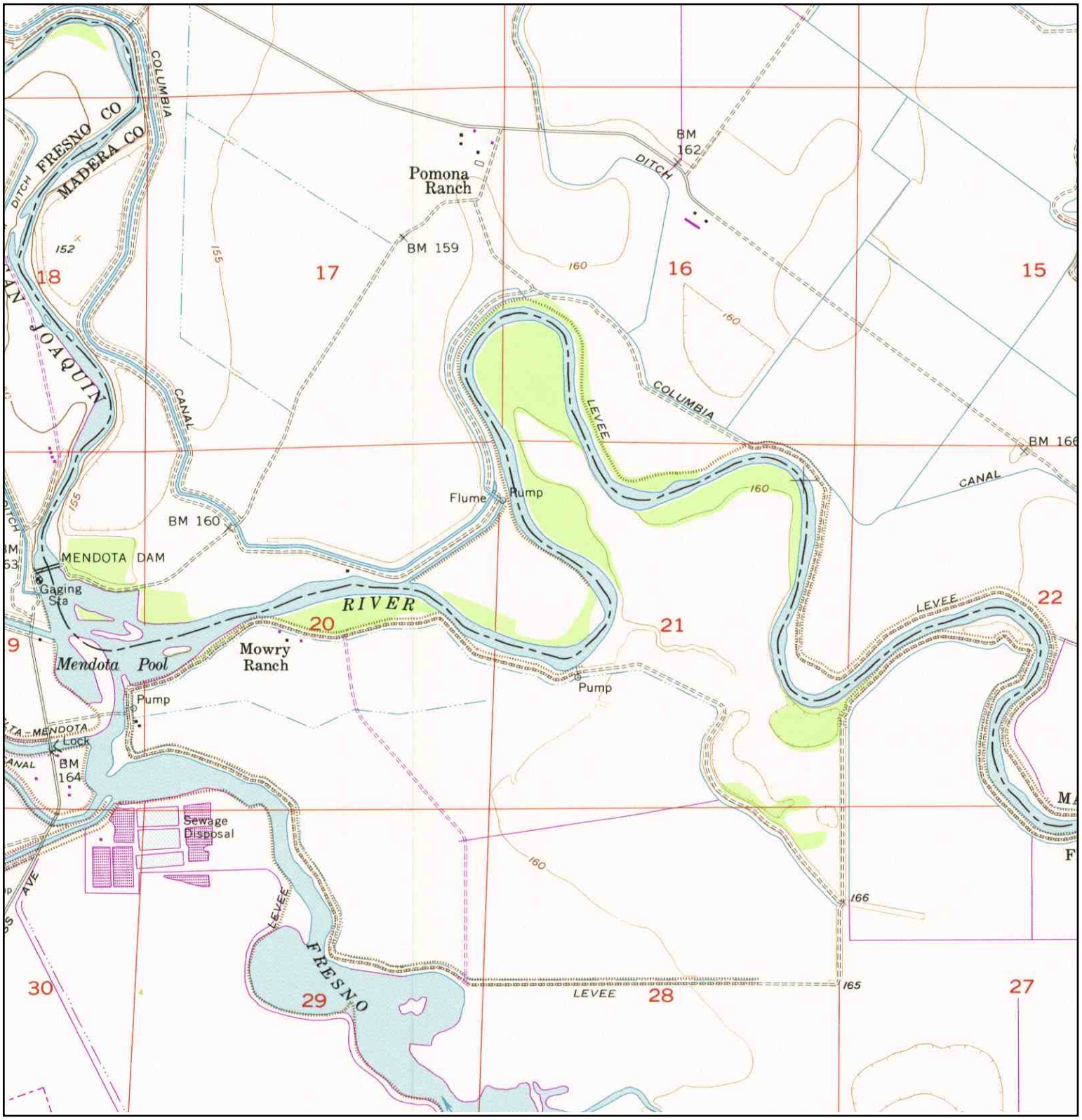
Historical Topographic Map



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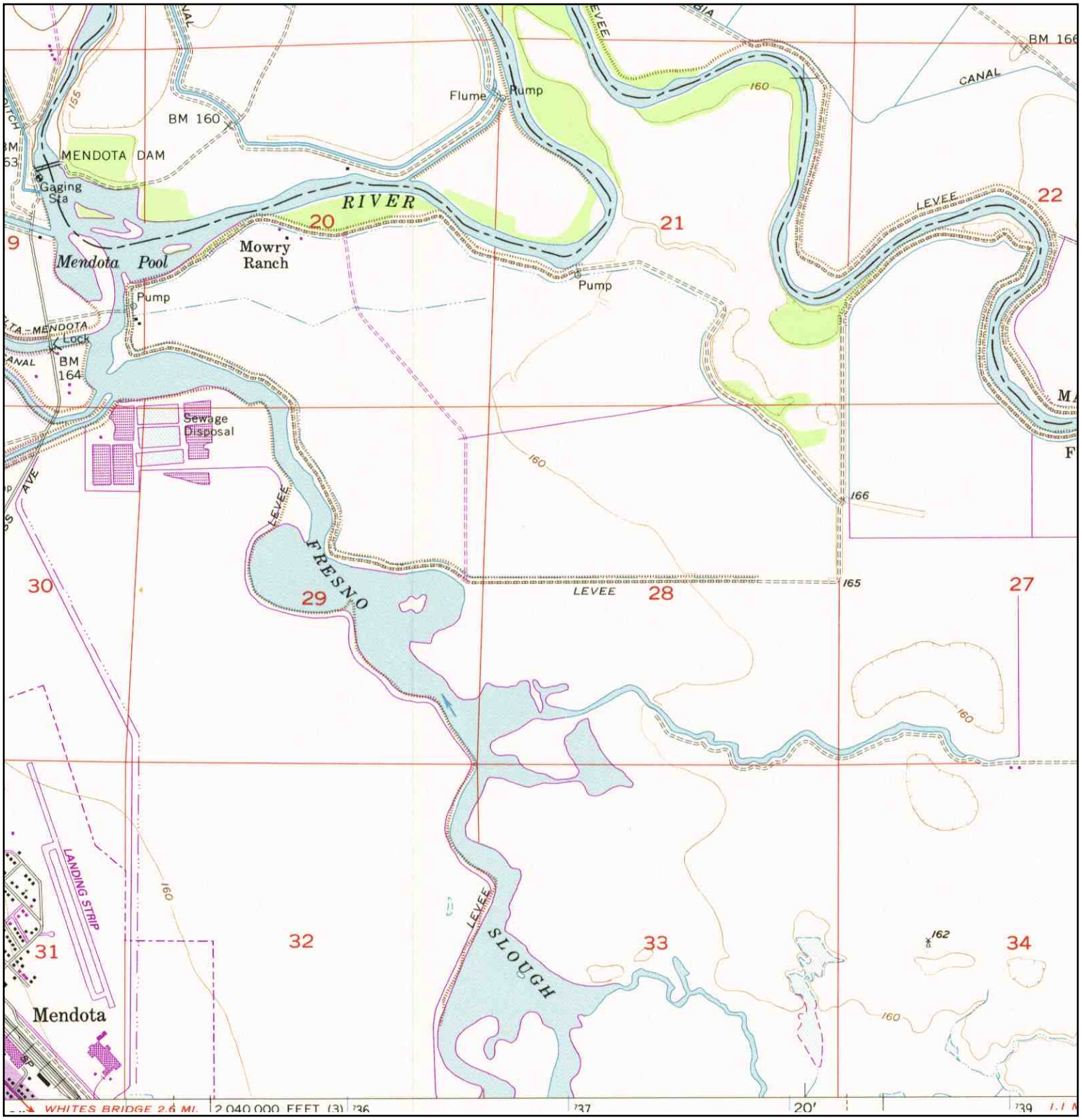

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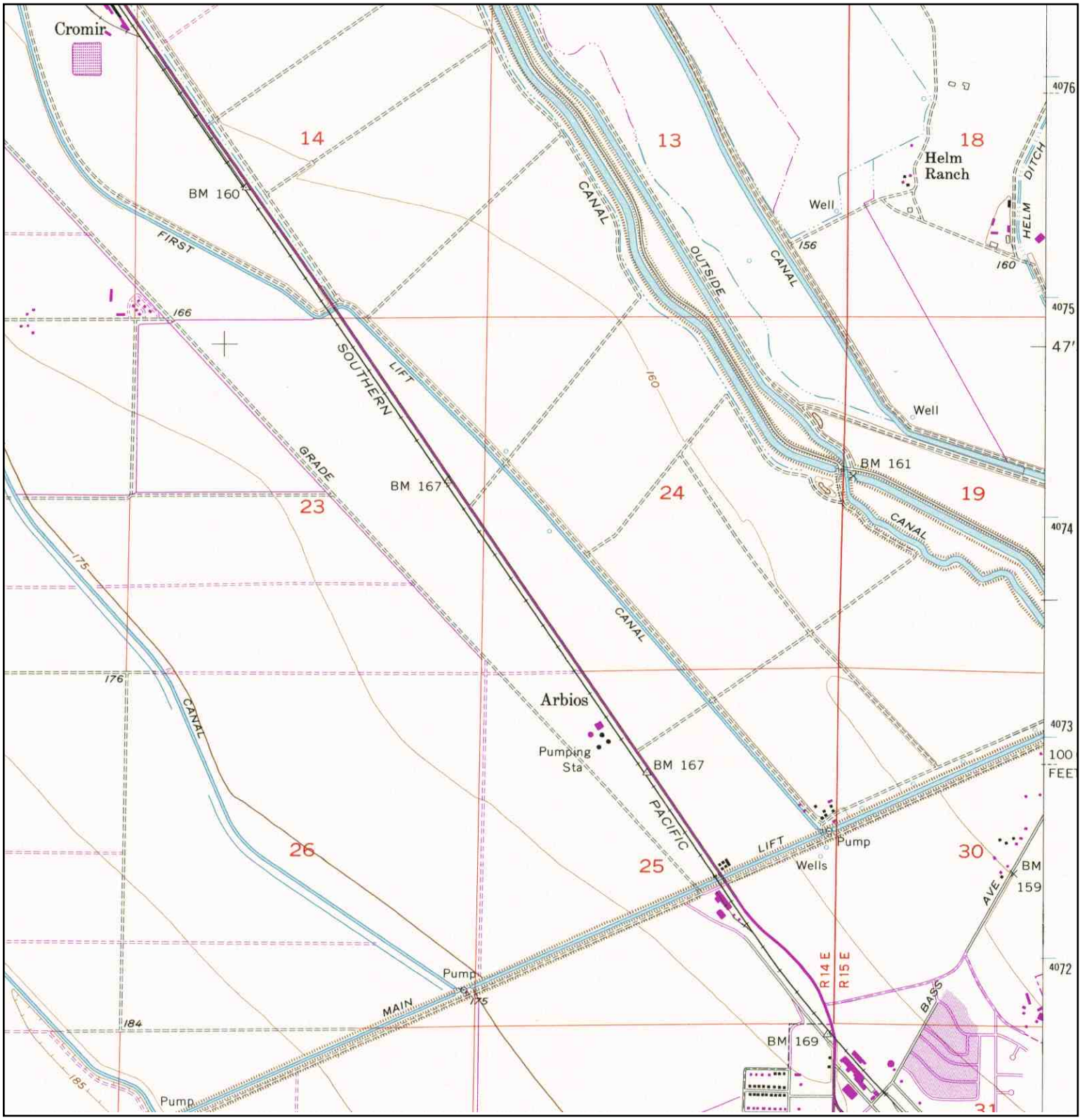

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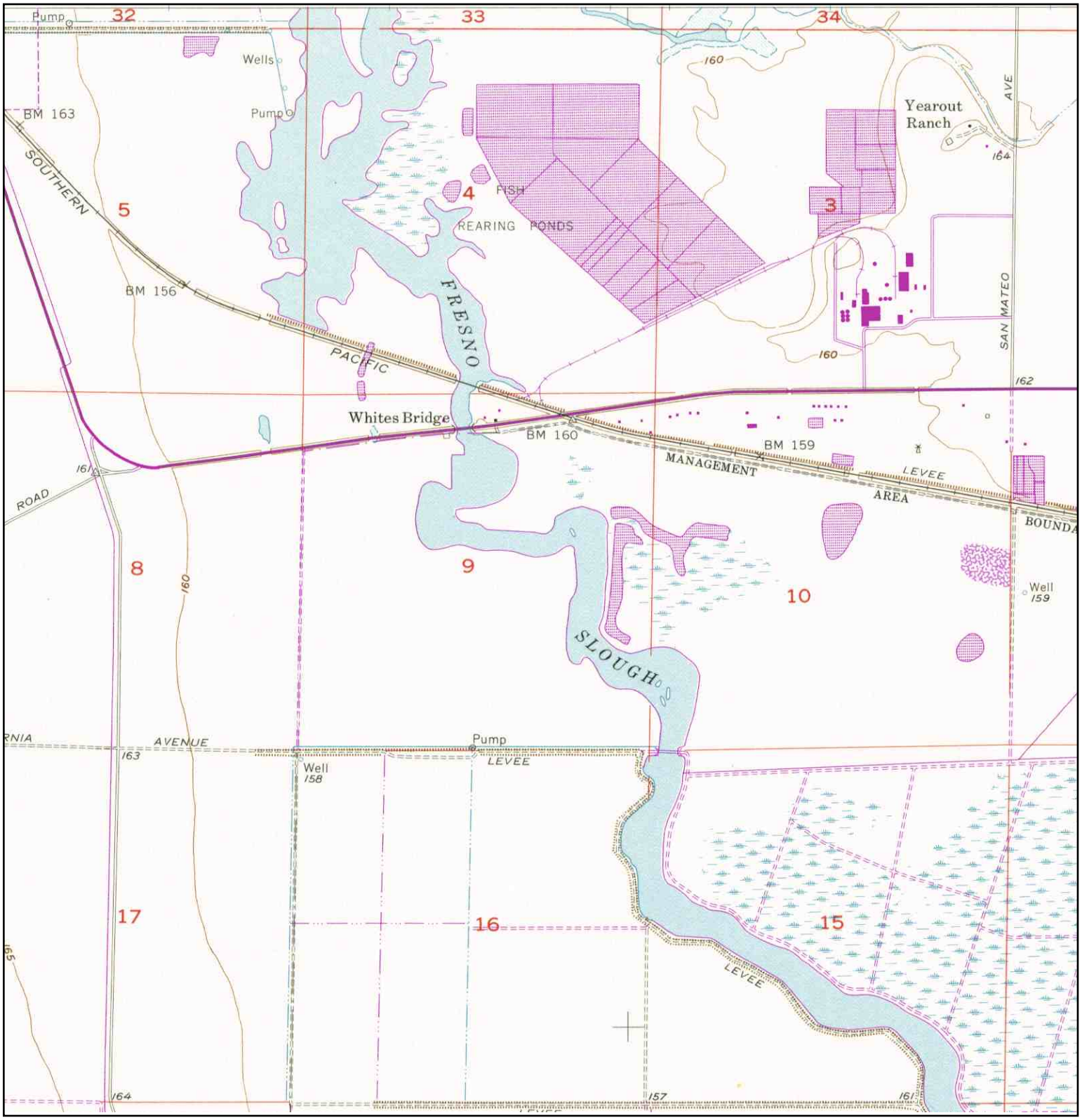

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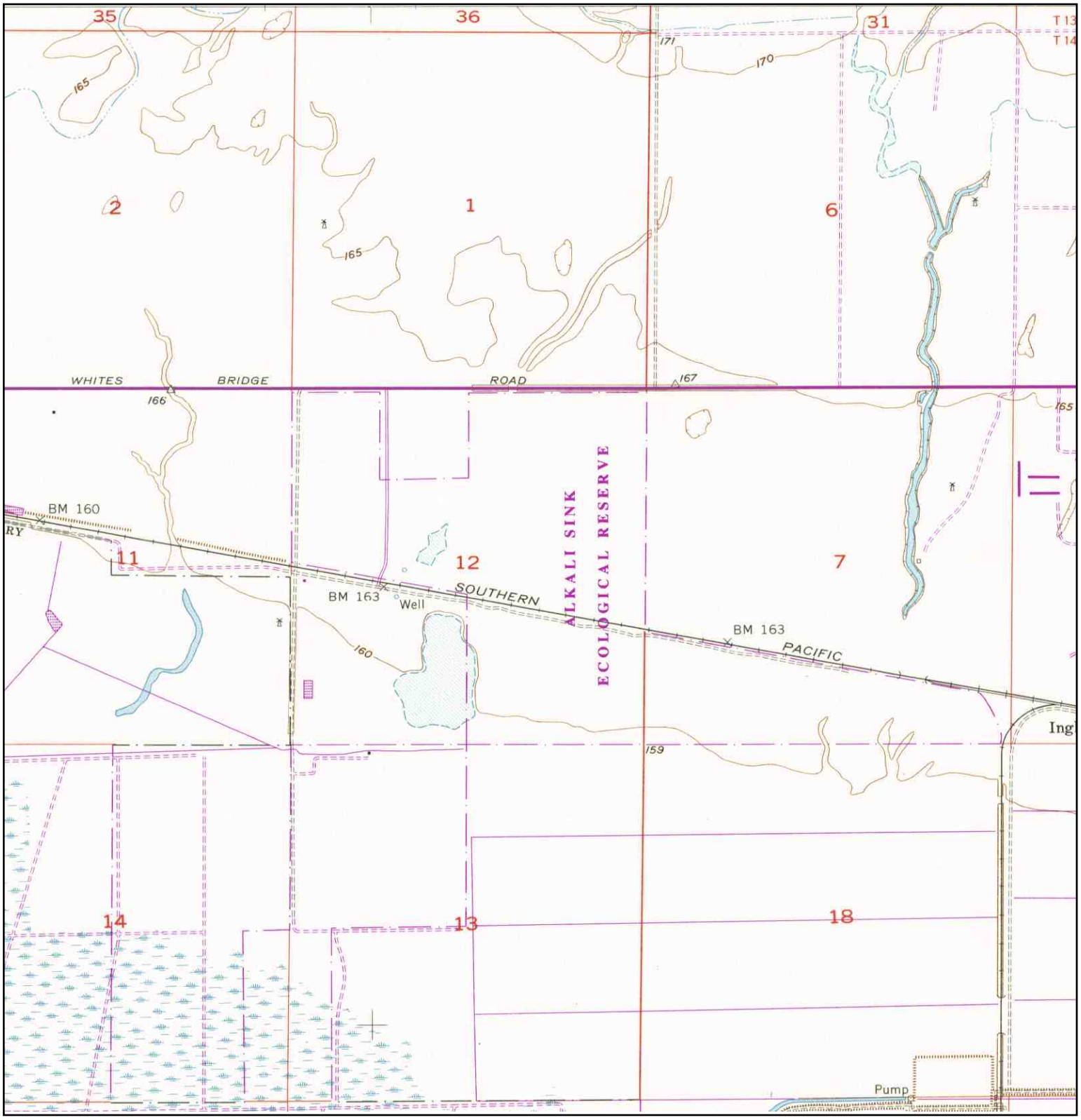
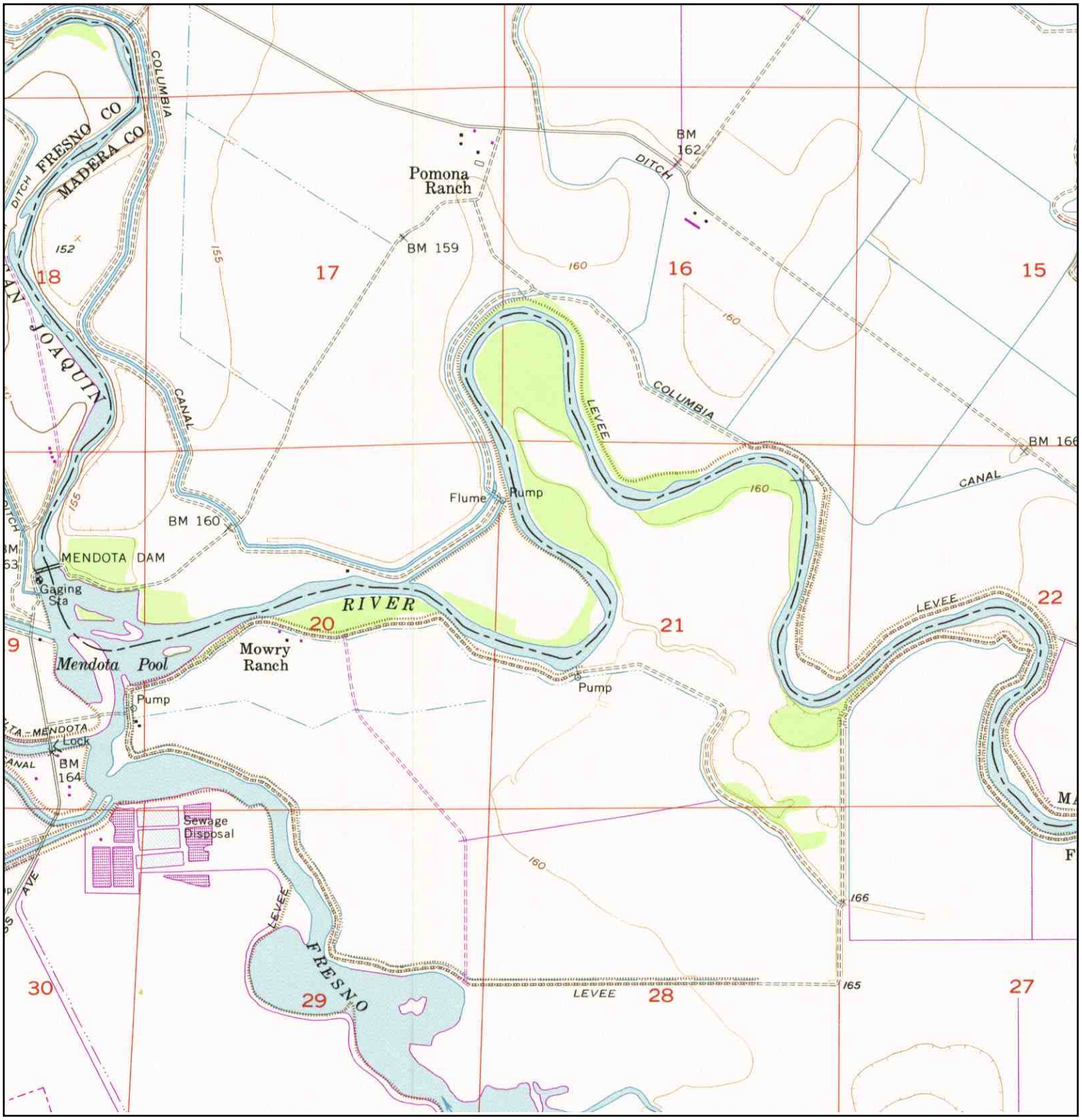


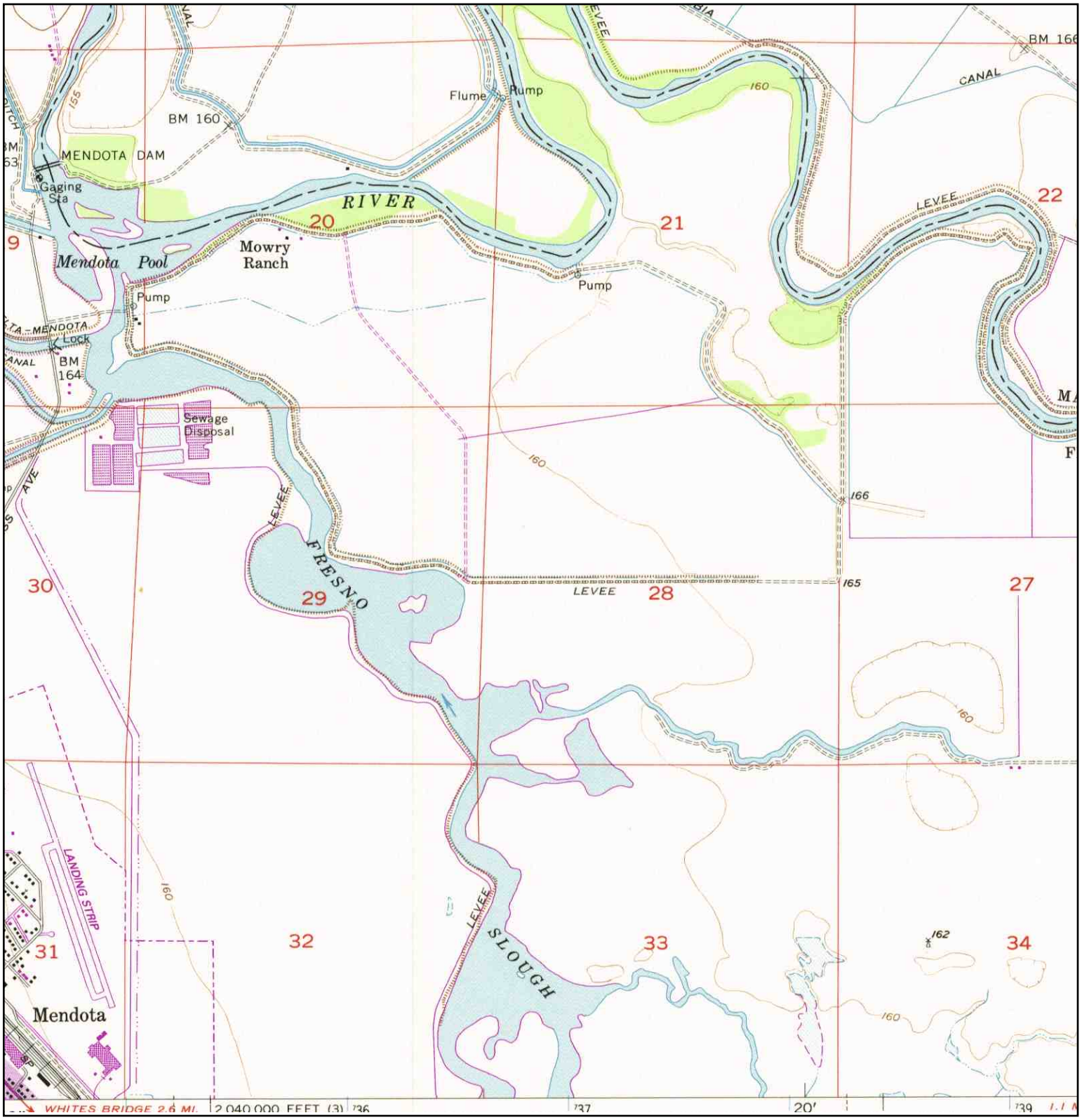
N	TARGET QUAD NAME: TRANQUILLITY MAP YEAR: 1984 PHOTOREVISED:1956 SERIES: 7.5 SCALE: 1:24000	SITE NAME: San Joaquin River Restoration Project Alternatives ADDRESS: San Joaquin River Restoration Project Alternatives Mendota, CA 93640 LAT/LONG: 36.7737 / -120.3304	CLIENT: URS Corporation CONTACT: Joe Morgan INQUIRY#: 3196001.2 RESEARCH DATE: 10/31/2011

Historical Topographic Map



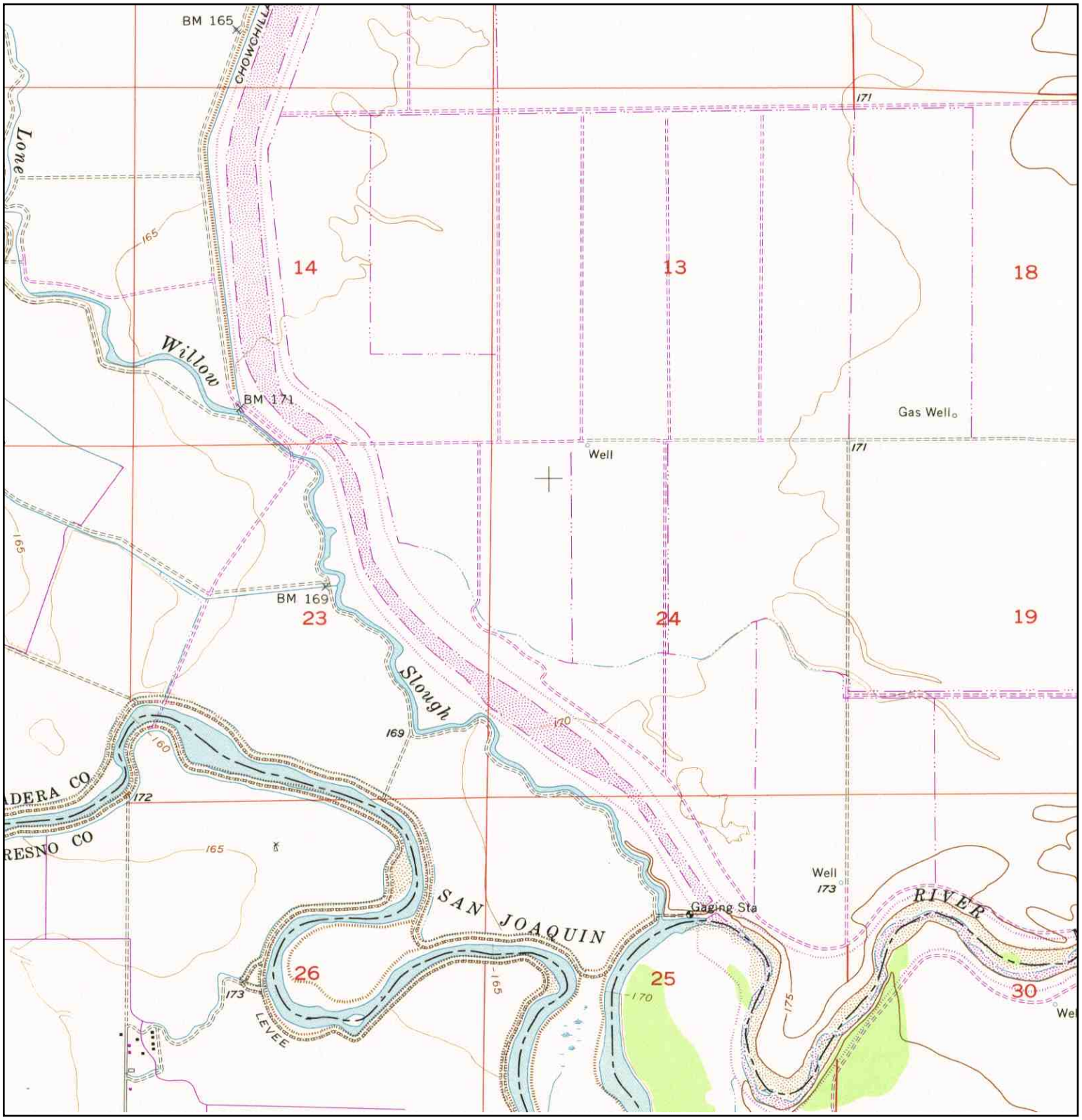
N	TARGET QUAD NAME: MENDOTA DAM MAP YEAR: 1984 PHOTOREVISED:1956 SERIES: 7.5 SCALE: 1:24000	SITE NAME: San Joaquin River Restoration Project Alternatives ADDRESS: San Joaquin River Restoration Project Alternatives Mendota, CA 93640 LAT/LONG: 36.7737 / -120.3304	CLIENT: URS Corporation CONTACT: Joe Morgan INQUIRY#: 3196001.2 RESEARCH DATE: 10/31/2011

Historical Topographic Map



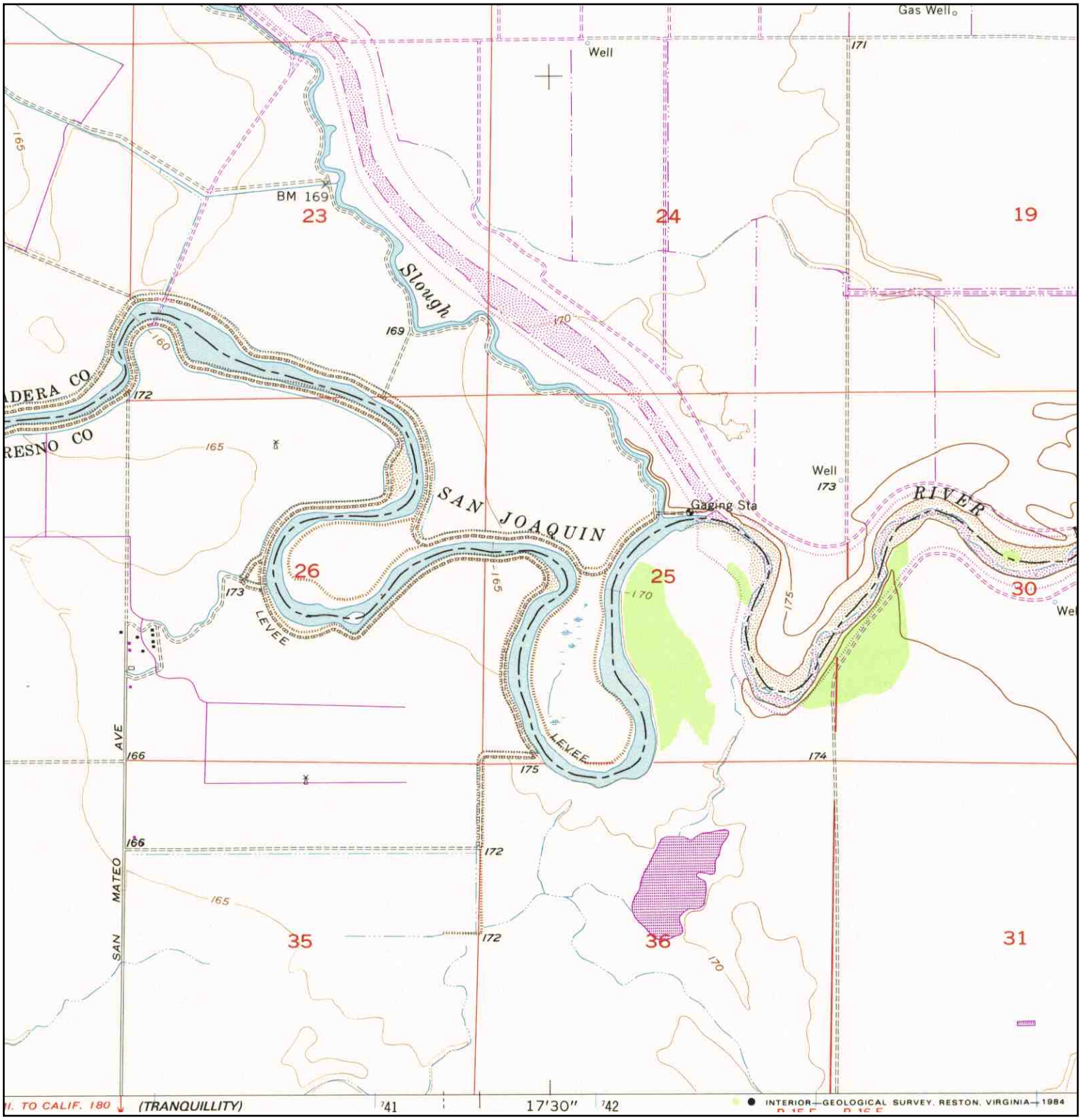
N	TARGET QUAD NAME: MENDOTA DAM MAP YEAR: 1984 PHOTOREVISED:1956 SERIES: 7.5 SCALE: 1:24000	SITE NAME: San Joaquin River Restoration Project Alternatives ADDRESS: San Joaquin River Restoration Project Alternatives Mendota, CA 93640 LAT/LONG: 36.7737 / -120.3304	CLIENT: URS Corporation CONTACT: Joe Morgan INQUIRY#: 3196001.2 RESEARCH DATE: 10/31/2011

Historical Topographic Map



N	TARGET QUAD NAME: MENDOTA DAM MAP YEAR: 1984 PHOTOREVISED:1956 SERIES: 7.5 SCALE: 1:24000	SITE NAME: San Joaquin River Restoration Project Alternatives ADDRESS: San Joaquin River Restoration Project Alternatives Mendota, CA 93640 LAT/LONG: 36.7737 / -120.3304	CLIENT: URS Corporation CONTACT: Joe Morgan INQUIRY#: 3196001.2 RESEARCH DATE: 10/31/2011

Historical Topographic Map



N	TARGET QUAD NAME: MENDOTA DAM MAP YEAR: 1984 PHOTOREVISED:1956 SERIES: 7.5 SCALE: 1:24000	SITE NAME: San Joaquin River Restoration Project Alternatives ADDRESS: San Joaquin River Restoration Project Alternatives Mendota, CA 93640 LAT/LONG: 36.7737 / -120.3304	CLIENT: URS Corporation CONTACT: Joe Morgan INQUIRY#: 3196001.2 RESEARCH DATE: 10/31/2011

San Joaquin River Restoration Project Alternatives

San Joaquin River Restoration Project Alternatives

Mendota, CA 93640

Inquiry Number: 3217246.1

December 01, 2011

Certified Sanborn® Map Report

EDR® Environmental Data Resources Inc

440 Wheelers Farms Road
Milford, CT 06461
800.352.0050
www.edrnet.com

Certified Sanborn® Map Report

12/01/11

Site Name:	**Client Name:**
San Joaquin River Restoration	URS Corporation
San Joaquin River Restoration	1333 Broadway
Mendota, CA 93640	Oakland, CA 94612
EDR Inquiry # 3217246.1	Contact: April Giangerelli

EDR® Environmental Data Resources Inc

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Certified Sanborn Results:

Site Name:	San Joaquin River Restoration Project
Address:	San Joaquin River Restoration Project
City, State, Zip:	Mendota, CA 93640
Cross Street:	
P.O. #	NA
Project:	186000200.00310
Certification #	0037-4FF8-8F49

Sanborn® Library search results
Certification # 0037-4FF8-8F49

UNMAPPED PROPERTY

This report certifies that the complete holdings of the Sanborn Library, LLC collection have been searched based on client supplied target property information, and fire insurance maps covering the target property were not found.

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- ✔ Library of Congress
- ✔ University Publications of America
- ✔ EDR Private Collection

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Attachment C

Well Search Report

San Joaquin River Restoration Project Alternatives
Mendota, CA 93640

Inquiry Number: 3196001.1w
December 01, 2011

EDR DataMap™ Well Search Report

Environmental Data Resources Inc

440 Wheelers Farms Road
Milford, CT 06461
Toll Free: 800.352.0050
www.edrnet.com

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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GEOCHECK VERSION 2.1
SUMMARY

FEDERAL DATABASE WELL INFORMATION

MAP ID	WELL ID
1	USGS3202138
1	USGS3202136
2	USGS3202131
3	USGS3202130
4	USGS3202122
6	USGS3202106
7	USGS3202065
9	USGS3202239
10	USGS3202238
11	USGS3202237
13	USGS3202232
12	USGS3202231
14	USGS3202212
15	USGS3202208
16	USGS3202207
16	USGS3202206
18	USGS3202197
18	USGS3202198
17	USGS3202195
18	USGS3202194
19	USGS3202190
21	USGS3202186
22	USGS3202184
22	USGS3202171
23	USGS3202328
24	USGS3202325
25	USGS3202324
26	USGS3202316
27	USGS3202312
29	USGS3202310
30	USGS3202308
31	USGS3202307
32	USGS3202305
33	USGS3202304
35	USGS3202298
36	USGS3202297
37	USGS3202295
38	USGS3202291
39	USGS3202289
41	USGS3202284
42	USGS3202283
45	USGS3202280
47	USGS3202279
47	USGS3202276
47	USGS3202275

GEOCHECK VERSION 2.1
SUMMARY

FEDERAL DATABASE WELL INFORMATION

MAP ID	WELL ID
47	USGS3202274
50	USGS3202417
51	USGS3202406
51	USGS3202405
51	USGS3202400
54	USGS3202399
51	USGS3202395
51	USGS3202397
51	USGS3202396
51	USGS3202398
51	USGS3202393
51	USGS3202392
57	USGS3202391
56	USGS3202388
58	USGS3202387
51	USGS3202385
51	USGS3202386
51	USGS3202384
59	USGS3202383
60	USGS3202381
60	USGS3202380
61	USGS3202378
57	USGS3202377
62	USGS3202376
64	USGS3202372
64	USGS3202373
65	USGS3202368
66	USGS3202365
67	USGS3202360
66	USGS3202353
66	USGS3202352
71	USGS3202351
68	USGS3202361
70	USGS3202350
78	USGS3202343
77	USGS3202342
81	USGS3202484
82	USGS3202481
83	USGS3202479
83	USGS3202478
84	USGS3202475
84	USGS3202477
84	USGS3202476
83	USGS3202474
85	USGS3202471
85	USGS3202470

GEOCHECK VERSION 2.1
SUMMARY

FEDERAL DATABASE WELL INFORMATION

MAP ID	WELL ID
86	USGS3202463
87	USGS3202461
88	USGS3202460
87	USGS3202458
90	USGS3202457
90	USGS3202456
87	USGS3202450
87	USGS3202451
87	USGS3202453
87	USGS3202445
87	USGS3202452
87	USGS3202447
87	USGS3202454
87	USGS3202444
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87	USGS3202446
87	USGS3202448
91	USGS3202442
87	USGS3202441
87	USGS3202438
92	USGS3202435
94	USGS3202434
95	USGS3202431
97	USGS3202425
94	USGS3202597
98	USGS3202584
100	USGS3202549
99	USGS3202548
102	USGS3202541
99	USGS3202540
99	USGS3202536
99	USGS3202533
104	USGS3202530
105	USGS3202520

STATE WATER WELL INFORMATION

MAP ID	WELL ID
5	CADW40000033126
5	CADW40000033127
8	CADW40000033061
8	CADW40000033062
12	CADW40000033050
15	CADW40000033015
16	CADW40000033013
17	CADW40000033009
20	CADW40000033000
20	CADW40000032994
22	CADW40000032972
23	CADW40000032949
24	CADW40000032944
28	CADW40000032935
28	CADW40000032934

GEOCHECK VERSION 2.1
SUMMARY

STATE WATER WELL INFORMATION

MAP ID	WELL ID
34	CADW40000032918
40	CADW40000032911
43	CADW40000032903
44	CADW40000032894
46	CADW40000032889
48	CADW40000032885
47	CADW40000032883
49	CADW40000032880
47	CADW40000032877
51	CADW40000032817
52	CADW40000032816
53	CADW40000032815
51	CADW40000032814
55	CADW40000032810
55	CADW40000032811
51	1010021
56	CADW40000032805
51	1010021
57	CADW40000032800
59	CADW40000032798
61	CADW40000032797
62	CADW40000032794
63	CADW40000032793
65	CADW40000032788
67	CADW40000032778
68	CADW40000032773
69	CADW40000032764
68	CADW40000032763
70	CADW40000032760
72	CADW40000032758
73	CADW40000032755
74	CADW40000032740
75	CADW40000032737
76	1010021
76	1010021
77	CADW40000032732
78	CADW40000032728
78	CADW40000032716
79	CADW40000032708
79	CADW40000032697
79	CADW40000032687
80	CADW40000032677
80	CADW40000032678
80	CADW40000032675
80	CADW40000032676
83	CADW40000032667
83	CADW40000032666
83	CADW40000032664
83	CADW40000032665
83	CADW40000032663
83	CADW40000032661
89	CADW40000032629
88	CADW40000032628
86	CADW40000032626

GEOCHECK VERSION 2.1
SUMMARY

STATE WATER WELL INFORMATION

MAP ID	WELL ID
86	CADW40000032627
90	CADW40000032625
90	CADW40000032624
93	CADW40000032613
93	CADW40000032614
94	CADW40000032605
94	CADW40000032604
99	CADW40000032539
101	CADW40000032530
101	CADW40000032529
99	CADW40000032521
99	CADW40000032520
99	CADW40000032518
103	CADW40000032513
99	CADW40000032509
103	CADW40000032505

STATE OIL/GAS WELL INFORMATION

MAP ID	WELL ID
1	CAOG70000193193
2	CAOG70000193190
3	CAOG70000193171
4	CAOG70000193168
5	CAOG70000193159
6	CAOG70000193157
7	CAOG70000193152
8	CAOG70000193134

PUBLIC WATER SUPPLY SYSTEM INFORMATION

Map ID:	96
PWS ID:	CA1000101
PWS Name:	CALIF DEPT OF FISH & GAME CALIF DEPT OF FISH & GAME SANTA FE GRADE MENDOTA, CA 93640

PWS currently has or had major violation(s) or enforcement:

USGS TOPOGRAPHIC MAP(S)

36120-F3 TRANQUILLITY, CA
36120-F4 COIT RANCH, CA
36120-G3 MENDOTA DAM, CA
36120-G4 FIREBAUGH, CA

AREA RADON INFORMATION

GEOCHECK VERSION 2.1
SUMMARY

AREA RADON INFORMATION

Federal Area Radon Information for Zip Code: 93640

Number of sites tested: 1

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	Not Reported	Not Reported	Not Reported	Not Reported
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	0.400 pCi/L	100%	0%	0%

Federal Area Radon Information for Zip Code: 93630

Number of sites tested: 1

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	0.900 pCi/L	100%	0%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	0.000 pCi/L	100%	0%	0%

Federal EPA Radon Zone for MADERA County: 2

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for MADERA COUNTY, CA

Number of sites tested: 20

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	1.405 pCi/L	100%	0%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	8.600 pCi/L	75%	0%	25%

Federal EPA Radon Zone for FRESNO County: 2

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for FRESNO COUNTY, CA

Number of sites tested: 100

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	1.251 pCi/L	98%	2%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	1.433 pCi/L	100%	0%	0%

GEOCHECK VERSION 2.1
STATE DATABASE WELL INFORMATION

Water Well Information:

Map ID:	1		
Agency cd:	USGS	Site no:	364905120204801
Site name:	013S015E09E001M		
Latitude:	364905	EDR Site id:	USGS3202138
Longitude:	1202048	Dec lat:	36.81800432
Dec lon:	-120.34766927	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	039
Country:	US	Land net:	SWSWNWS09 T13S R15E M
Location map:	MENDOTA DAM	Map scale:	24000
Altitude:	160.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5.		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Middle San JoaquinLower Chowchilla. California. Area = 2640 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19500809
Date inventoried:	19561219	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	308	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

Map ID:	1		
Agency cd:	USGS	Site no:	364901120204701
Site name:	013S015E09E002M		
Latitude:	364901	EDR Site id:	USGS3202136
Longitude:	1202047	Dec lat:	36.81689322
Dec lon:	-120.34739145	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	039
Country:	US	Land net:	Not Reported
Location map:	MENDOTA DAM	Map scale:	24000

Altitude:	160.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5.		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Middle San JoaquinLower Chowchilla. California. Area = 2640 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19640101
Date inventoried:	19650806	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	308	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1965-11-01	Ground water data end date:	1965-11-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1965-11-01	25.00	

Map ID:	2		
Agency cd:	USGS	Site no:	364855120212201
Site name:	013S015E07G001M		
Latitude:	364855	EDR Site id:	USGS3202131
Longitude:	1202122	Dec lat:	36.81522664
Dec lon:	-120.35711393	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	039
Country:	US	Land net:	SESWNES07 T13S R15E M
Location map:	MENDOTA DAM	Map scale:	24000
Altitude:	155.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Middle San JoaquinLower Chowchilla. California. Area = 2640 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	19561219	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	Not Reported	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported

Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

Map ID:	3		
Agency cd:	USGS	Site no:	364855120200201
Site name:	013S015E09H001M		
Latitude:	364855	EDR Site id:	USGS3202130
Longitude:	1202002	Dec lat:	36.81522651
Dec lon:	-120.33489101	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	039
Country:	US	Land net:	SWSENES09 T13S R15E M
Location map:	MENDOTA DAM	Map scale:	24000
Altitude:	160.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5.		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Middle San JoaquinLower Chowchilla. California. Area = 2640 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19500902
Date inventoried:	19561219	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	328	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

Map ID:	4		
Agency cd:	USGS	Site no:	364849120224501
Site name:	013S015E07L001M		
Latitude:	364849	EDR Site id:	USGS3202122
Longitude:	1202245	Dec lat:	36.81356012
Dec lon:	-120.38017015	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	019
Country:	US	Land net:	NWNESWS07 T13S R15E M
Location map:	FIREBAUGH	Map scale:	24000

Altitude:	155.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5.		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Middle San JoaquinLower Chowchilla. California. Area = 2640 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19530201
Date inventoried:	19561129	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	ALLUVIUM ABOVE E-CLAY		
Well depth:	265	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	1968-07-15
Water quality data end date:	1968-07-15	Water quality data count:	1
Ground water data begin date:	1960-05-01	Ground water data end date:	1960-05-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1960-05-01	27.00	

Map ID:	6		
Agency cd:	USGS	Site no:	364831120204601
Site name:	013S015E09M001M		
Latitude:	364831	EDR Site id:	USGS3202106
Longitude:	1202046	Dec lat:	36.80856002
Dec lon:	-120.34711342	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	039
Country:	US	Land net:	SWNWSWS09 T13S R15E M
Location map:	MENDOTA DAM	Map scale:	24000
Altitude:	160.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5.		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Middle San JoaquinLower Chowchilla. California. Area = 2640 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19560101
Date inventoried:	19561219	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	263	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported

Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

Map ID:	7		
Agency cd:	USGS	Site no:	364824120223101
Site name:	013S015E18B001M		
Latitude:	364824	EDR Site id:	USGS3202065
Longitude:	1202231	Dec lat:	36.80661577
Dec lon:	-120.37628094	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	019
Country:	US	Land net:	NWNWNES18 T13S R15E M
Location map:	FIREBAUGH	Map scale:	24000
Altitude:	157.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5.		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Middle San JoaquinLower Chowchilla. California. Area = 2640 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	19561129	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	Not Reported	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1960-05-01	Ground water data end date:	1960-05-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1960-05-01	22.00	

Map ID:	9		
Agency cd:	USGS	Site no:	364819120203401
Site name:	013S015E16D001M		
Latitude:	364819	EDR Site id:	USGS3202239
Longitude:	1202034	Dec lat:	36.80522672
Dec lon:	-120.34377989	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	039
Country:	US	Land net:	NWNWNWS16 T13S R15E M
Location map:	MENDOTA DAM	Map scale:	24000
Altitude:	164.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5.		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Middle San JoaquinLower Chowchilla. California. Area = 2640 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19390801
Date inventoried:	19561211	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	290	Hole depth:	Not Reported
Source of depth data:	other reported		
Project number:	Not Reported		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1965-02-01	Ground water data end date:	1965-02-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1965-02-01	21.00	

Map ID:	10		
Agency cd:	USGS	Site no:	364816120202201
Site name:	013S015E16B001M		
Latitude:	364816	EDR Site id:	USGS3202238
Longitude:	1202022	Dec lat:	36.80439338
Dec lon:	-120.34044642	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	039
Country:	US	Land net:	SWNWNES16 T13S R15E M
Location map:	MENDOTA DAM	Map scale:	24000
Altitude:	165.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5.		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Middle San JoaquinLower Chowchilla. California. Area = 2640 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19480311
Date inventoried:	19561219	Mean greenwich time offset:	PST

Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	330	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

Map ID:	11		
Agency cd:	USGS	Site no:	364814120210101
Site name:	013S015E17A001M		
Latitude:	364814	EDR Site id:	USGS3202237
Longitude:	1202101	Dec lat:	36.80383789
Dec lon:	-120.35128008	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	019
Country:	US	Land net:	Not Reported
Location map:	MENDOTA DAM	Map scale:	24000
Altitude:	160.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5.		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Middle San JoaquinLower Chowchilla. California. Area = 2640 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	19620903	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	Not Reported	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1962-09-01	Ground water data end date:	1962-09-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1962-09-01	14.00	

Map ID:	13		
Agency cd:	USGS	Site no:	364811120222801
Site name:	013S015E18G001M		
Latitude:	364811	EDR Site id:	USGS3202232
Longitude:	1202228	Dec lat:	36.80300471
Dec lon:	-120.37544747	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	019
Country:	US	Land net:	SESWNES18 T13S R15E M
Location map:	MENDOTA DAM	Map scale:	24000
Altitude:	155.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5.		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Middle San JoaquinLower Chowchilla. California. Area = 2640 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19541127
Date inventoried:	19561129	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	ALLUVIUM ABOVE E-CLAY		
Well depth:	330	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	1968-07-17
Water quality data end date:	1979-08-14	Water quality data count:	2
Ground water data begin date:	1960-05-01	Ground water data end date:	1960-05-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1960-05-01	25.00	

Map ID:	12		
Agency cd:	USGS	Site no:	364810120183401
Site name:	013S015E14E001M		
Latitude:	364810	EDR Site id:	USGS3202231
Longitude:	1201834	Dec lat:	36.80272656
Dec lon:	-120.31044544	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	039
Country:	US	Land net:	SWSWNWS14 T13S R15E M
Location map:	MENDOTA DAM	Map scale:	24000
Altitude:	165.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5.		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Middle San JoaquinLower Chowchilla. California. Area = 2640 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19480515
Date inventoried:	19560906	Mean greenwich time offset:	PST

Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	283	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1964-08-01	Ground water data end date:	1964-08-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1964-08-01	64.00	

Map ID:	14		
Agency cd:	USGS	Site no:	364800120191001
Site name:	013S015E15G001M		
Latitude:	364800	EDR Site id:	USGS3202212
Longitude:	1201910	Dec lat:	36.79994889
Dec lon:	-120.32044568	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	039
Country:	US	Land net:	SWSWNES15 T13S R15E M
Location map:	MENDOTA DAM	Map scale:	24000
Altitude:	165.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5.		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Middle San JoaquinLower Chowchilla. California. Area = 2640 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19480801
Date inventoried:	19560801	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	384	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

Map ID:	15		
Agency cd:	USGS	Site no:	364757120183301
Site name:	013S015E14M001M		
Latitude:	364757	EDR Site id:	USGS3202208
Longitude:	1201833	Dec lat:	36.7991155
Dec lon:	-120.31016755	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	039
Country:	US	Land net:	Not Reported
Location map:	MENDOTA DAM	Map scale:	24000
Altitude:	165.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5.		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Middle San JoaquinLower Chowchilla. California. Area = 2640 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19491001
Date inventoried:	19560906	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	300	Hole depth:	304
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

Map ID:	16		
Agency cd:	USGS	Site no:	364754120225702
Site name:	013S015E18M002M		
Latitude:	364754	EDR Site id:	USGS3202207
Longitude:	1202257	Dec lat:	36.79828261
Dec lon:	-120.38350314	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	019
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	155.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5.		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Middle San JoaquinLower Chowchilla. California. Area = 2640 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	Not Reported	Mean greenwich time offset:	PST

Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	100	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

Map ID:	16		
Agency cd:	USGS	Site no:	364754120225701
Site name:	013S015E18M001M		
Latitude:	364754	EDR Site id:	USGS3202206
Longitude:	1202257	Dec lat:	36.79828261
Dec lon:	-120.38350314	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	019
Country:	US	Land net:	Not Reported
Location map:	FIREBAUGH	Map scale:	24000
Altitude:	155.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5.		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Middle San JoaquinLower Chowchilla. California. Area = 2640 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	1949
Date inventoried:	19680610	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	152	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

Map ID:	18		
Agency cd:	USGS	Site no:	364747120223401
Site name:	013S015E18Q001M		
Latitude:	364747	EDR Site id:	USGS3202197
Longitude:	1202234	Dec lat:	36.79633816
Dec lon:	-120.37711399	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	019
Country:	US	Land net:	NWSWSES18 T13S R15E N
Location map:	FIREBAUGH	Map scale:	24000
Altitude:	160.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5.		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Middle San JoaquinLower Chowchilla. California. Area = 2640 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	19610501	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	Not Reported	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

Map ID:	18		
Agency cd:	USGS	Site no:	364747120223402
Site name:	013S015E18Q002M		
Latitude:	364747	EDR Site id:	USGS3202198
Longitude:	1202234	Dec lat:	36.79633816
Dec lon:	-120.37711399	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	019
Country:	US	Land net:	NWSWSES 18T 13S R 15E
Location map:	FIREBAUGH	Map scale:	24000
Altitude:	160.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	2.5		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Upper Tuolumne. California. Area = 1600 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19760316
Date inventoried:	19850129	Mean greenwich time offset:	PST

Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	ALLUVIUM ABOVE E-CLAY		
Well depth:	220	Hole depth:	225
Source of depth data:	driller		
Project number:	Not Reported		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	1985-05-13
Water quality data end date:	1985-05-13	Water quality data count:	1
Ground water data begin date:	0000-00-00	Ground water data end date:	0000-00-00
Ground water data count:	0		

Ground-water levels, Number of Measurements: 0

Map ID:	17		
Agency cd:	USGS	Site no:	364745120220501
Site name:	013S015E18R001M		
Latitude:	364745	EDR Site id:	USGS3202195
Longitude:	1202205	Dec lat:	36.79578257
Dec lon:	-120.36905817	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	039
Country:	US	Land net:	Not Reported
Location map:	MENDOTA DAM	Map scale:	24000
Altitude:	157.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5.		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Middle San JoaquinLower Chowchilla. California. Area = 2640 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	19641023	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	94.0	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1964-10-01	Ground water data end date:	1964-10-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1964-10-01	18.00	

Map ID:	18		
Agency cd:	USGS	Site no:	364744120223401
Site name:	013S015E18P001M		
Latitude:	364744	EDR Site id:	USGS3202194
Longitude:	1202234	Dec lat:	36.79550484
Dec lon:	-120.37711397	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	019
Country:	US	Land net:	NESESWS18 T13S R15E M
Location map:	FIREBAUGH	Map scale:	24000
Altitude:	160.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5.		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Middle San JoaquinLower Chowchilla. California. Area = 2640 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	19680610	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	Not Reported	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

Map ID:	19		
Agency cd:	USGS	Site no:	364740120201401
Site name:	013S015E16Q001M		
Latitude:	364740	EDR Site id:	USGS3202190
Longitude:	1202014	Dec lat:	36.79439352
Dec lon:	-120.33822384	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	039
Country:	US	Land net:	SESWSES16 T13S R15E M
Location map:	MENDOTA DAM	Map scale:	24000
Altitude:	160.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5.		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Middle San JoaquinLower Chowchilla. California. Area = 2640 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	1960
Date inventoried:	19650806	Mean greenwich time offset:	PST

Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	260	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1965-11-01	Ground water data end date:	1965-11-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1965-11-01	27.00	

Map ID:	21		
Agency cd:	USGS	Site no:	364737120181701
Site name:	013S015E14P001M		
Latitude:	364737	EDR Site id:	USGS3202186
Longitude:	1201817	Dec lat:	36.79356001
Dec lon:	-120.30572281	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	039
Country:	US	Land net:	SESWSES14 T13S R15E M
Location map:	MENDOTA DAM	Map scale:	24000
Altitude:	170.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5.		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Middle San JoaquinLower Chowchilla. California. Area = 2640 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19480507
Date inventoried:	19560806	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	ALLUVIUM ABOVE E-CLAY		
Well depth:	279	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	1965-06-07
Water quality data end date:	1965-06-07	Water quality data count:	1
Ground water data begin date:	0000-00-00	Ground water data end date:	0000-00-00
Ground water data count:	0		

Ground-water levels, Number of Measurements: 0

Map ID:	22		
Agency cd:	USGS	Site no:	364736120172401
Site name:	013S015E13N001M		
Latitude:	364736	EDR Site id:	USGS3202184
Longitude:	1201724	Dec lat:	36.79328215
Dec lon:	-120.29100013	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	039
Country:	US	Land net:	Not Reported
Location map:	MENDOTA DAM	Map scale:	24000
Altitude:	168.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5.		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Middle San JoaquinLower Chowchilla. California. Area = 2640 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	19640918	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	Not Reported	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	0000-00-00	Ground water data end date:	0000-00-00
Ground water data count:	0		

Ground-water levels, Number of Measurements: 0

Map ID:	22		
Agency cd:	USGS	Site no:	364735120172301
Site name:	013S015E24D001M		
Latitude:	364735	EDR Site id:	USGS3202171
Longitude:	1201723	Dec lat:	36.79300437
Dec lon:	-120.29072233	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	039
Country:	US	Land net:	NWNWNWS24 T13S R15E M
Location map:	MENDOTA DAM	Map scale:	24000
Altitude:	168.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5.		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Middle San JoaquinLower Chowchilla. California. Area = 2640 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	19561212	Mean greenwich time offset:	PST

Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	204	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

Map ID:	23		
Agency cd:	USGS	Site no:	364727120232101
Site name:	013S014E24B001M		
Latitude:	364727	EDR Site id:	USGS3202328
Longitude:	1202321	Dec lat:	36.79078277
Dec lon:	-120.39016979	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	019
Country:	US	Land net:	Not Reported
Location map:	FIREBAUGH	Map scale:	24000
Altitude:	159.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5.		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Middle San JoaquinLower Chowchilla. California. Area = 2640 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19641001
Date inventoried:	19680611	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	234	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

Map ID:	24		
Agency cd:	USGS	Site no:	364723120214501
Site name:	013S015E20D001M		
Latitude:	364723	EDR Site id:	USGS3202325
Longitude:	1202145	Dec lat:	36.78967152
Dec lon:	-120.36350226	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	039
Country:	US	Land net:	SENWNWS20 T13S R15E M
Location map:	MENDOTA DAM	Map scale:	24000
Altitude:	160.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5.		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Middle San JoaquinLower Chowchilla. California. Area = 2640 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	19530401
Date inventoried:	19561211	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	252	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

Map ID:	25		
Agency cd:	USGS	Site no:	364723120203201
Site name:	013S015E16L001M		
Latitude:	364723	EDR Site id:	USGS3202324
Longitude:	1202032	Dec lat:	36.7896714
Dec lon:	-120.34322386	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	039
Country:	US	Land net:	SENESWS16 T13S R15E M
Location map:	MENDOTA DAM	Map scale:	24000
Altitude:	165.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5.		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Middle San JoaquinLower Chowchilla. California. Area = 2640 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	1946
Date inventoried:	19561211	Mean greenwich time offset:	PST

Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	225	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

Map ID:	26		
Agency cd:	USGS	Site no:	364720120225401
Site name:	013S015E19E001M		
Latitude:	364720	EDR Site id:	USGS3202316
Longitude:	1202254	Dec lat:	36.78883832
Dec lon:	-120.3826695	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	019
Country:	US	Land net:	Not Reported
Location map:	FIREBAUGH	Map scale:	24000
Altitude:	155.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5.		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Middle San JoaquinLower Chowchilla. California. Area = 2640 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	19590510	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	ALLUVIUM ABOVE E-CLAY		
Well depth:	350	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	1968-07-15
Water quality data end date:	1968-07-15	Water quality data count:	1
Ground water data begin date:	1961-05-01	Ground water data end date:	1961-05-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1961-05-01	36.00	

Map ID:	27		
Agency cd:	USGS	Site no:	364718120172701
Site name:	013S015E24E001M		
Latitude:	364718	EDR Site id:	USGS3202312
Longitude:	1201727	Dec lat:	36.78828222
Dec lon:	-120.29183335	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	039
Country:	US	Land net:	Not Reported
Location map:	MENDOTA DAM	Map scale:	24000
Altitude:	Not Reported		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5		
Altitude datum:	Not Reported		
Hydrologic:	Middle San JoaquinLower Chowchilla. California. Area = 2640 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	19620913	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	5530	Hole depth:	Not Reported
Source of depth data:	other reported		
Project number:	Not Reported		
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

Map ID:	29		
Agency cd:	USGS	Site no:	364717120184301
Site name:	013S015E23E001M		
Latitude:	364717	EDR Site id:	USGS3202310
Longitude:	1201843	Dec lat:	36.78800458
Dec lon:	-120.3129451	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	039
Country:	US	Land net:	Not Reported
Location map:	MENDOTA DAM	Map scale:	24000
Altitude:	165.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5.		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Middle San JoaquinLower Chowchilla. California. Area = 2640 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	19560406
Date inventoried:	19620903	Mean greenwich time offset:	PST

Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	250	Hole depth:	Not Reported
Source of depth data:	other reported		
Project number:	Not Reported		
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

Map ID:	30		
Agency cd:	USGS	Site no:	364716120223301
Site name:	013S015E19B001M		
Latitude:	364716	EDR Site id:	USGS3202308
Longitude:	1202233	Dec lat:	36.78772719
Dec lon:	-120.37683595	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	019
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	163.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5.		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Middle San JoaquinLower Chowchilla. California. Area = 2640 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	Not Reported	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1960-05-01	Ground water data end date:	1960-05-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1960-05-01	15.00	

Map ID:	31		
Agency cd:	USGS	Site no:	364715120195701
Site name:	013S015E21H001M		
Latitude:	364715	EDR Site id:	USGS3202307
Longitude:	1201957	Dec lat:	36.78744915
Dec lon:	-120.33350127	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	039
Country:	US	Land net:	Not Reported
Location map:	MENDOTA DAM	Map scale:	24000
Altitude:	165.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5.		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Middle San JoaquinLower Chowchilla. California. Area = 2640 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	19640107
Date inventoried:	19650806	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	306	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1965-11-01	Ground water data end date:	1965-11-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1965-11-01	30.00	

Map ID:	32		
Agency cd:	USGS	Site no:	364712120203001
Site name:	013S015E20L001M		
Latitude:	364712	EDR Site id:	USGS3202305
Longitude:	1202030	Dec lat:	36.78661589
Dec lon:	-120.3426682	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	019
Country:	US	Land net:	S20 T13S R15E M
Location map:	MENDOTA DAM	Map scale:	24000
Altitude:	160.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	52		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Middle San JoaquinLower Chowchilla. California. Area = 2640 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	19620906	Mean greenwich time offset:	PST

Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	25.0	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1963-10-01	Ground water data end date:	1963-10-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1963-10-01	9.10	

Map ID:	33		
Agency cd:	USGS	Site no:	364712120192501
Site name:	013S015E15P001M		
Latitude:	364712	EDR Site id:	USGS3202304
Longitude:	1201925	Dec lat:	36.78661578
Dec lon:	-120.32461209	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	039
Country:	US	Land net:	NESESWS15 T13S R15E M
Location map:	MENDOTA DAM	Map scale:	24000
Altitude:	165.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5.		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Middle San JoaquinLower Chowchilla. California. Area = 2640 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19530213
Date inventoried:	19561219	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	300	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

Map ID:	35		
Agency cd:	USGS	Site no:	364706120223801
Site name:	013S015E19K003M		
Latitude:	364706	EDR Site id:	USGS3202298
Longitude:	1202238	Dec lat:	36.78494946
Dec lon:	-120.3782248	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	019
Country:	US	Land net:	Not Reported
Location map:	MENDOTA DAM	Map scale:	24000
Altitude:	155.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5.		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Middle San JoaquinLower Chowchilla. California. Area = 2640 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	19560616
Date inventoried:	19680611	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	132	Hole depth:	Not Reported
Source of depth data:	other reported		
Project number:	Not Reported		
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

Map ID:	36		
Agency cd:	USGS	Site no:	364705120180001
Site name:	013S015E23K001M		
Latitude:	364705	EDR Site id:	USGS3202297
Longitude:	1201800	Dec lat:	36.78467122
Dec lon:	-120.30100019	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	039
Country:	US	Land net:	SENWSES23 T13S R15E M
Location map:	MENDOTA DAM	Map scale:	24000
Altitude:	170.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5.		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Middle San JoaquinLower Chowchilla. California. Area = 2640 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	19400415
Date inventoried:	19520911	Mean greenwich time offset:	PST

Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	121	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

Map ID:	37		
Agency cd:	USGS	Site no:	364704120221901
Site name:	013S015E19K002M		
Latitude:	364704	EDR Site id:	USGS3202295
Longitude:	1202219	Dec lat:	36.78439388
Dec lon:	-120.37294684	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	019
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	159.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5.		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Middle San JoaquinLower Chowchilla. California. Area = 2640 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	38.0	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

Map ID:	38		
Agency cd:	USGS	Site no:	364702120185601
Site name:	013S015E22J001M		
Latitude:	364702	EDR Site id:	USGS3202291
Longitude:	1201856	Dec lat:	36.783838
Dec lon:	-120.3165562	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	039
Country:	US	Land net:	Not Reported
Location map:	MENDOTA DAM	Map scale:	24000
Altitude:	165.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5.		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Middle San JoaquinLower Chowchilla. California. Area = 2640 sq.mi.		
Topographic:	Flood plain		
Site type:	Ground-water other than Spring	Date construction:	195603
Date inventoried:	19630407	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	250	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

Map ID:	39		
Agency cd:	USGS	Site no:	364701120223301
Site name:	013S015E19K001M		
Latitude:	364701	EDR Site id:	USGS3202289
Longitude:	1202233	Dec lat:	36.78356059
Dec lon:	-120.37683583	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	019
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	155.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5.		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Middle San JoaquinLower Chowchilla. California. Area = 2640 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	1951
Date inventoried:	Not Reported	Mean greenwich time offset:	PST

Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	200	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

Map ID:	41		
Agency cd:	USGS	Site no:	364657120231701
Site name:	013S014E24J001M		
Latitude:	364657	EDR Site id:	USGS3202284
Longitude:	1202317	Dec lat:	36.78244957
Dec lon:	-120.38905839	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	019
Country:	US	Land net:	SWSENES24 T13S R14E M
Location map:	FIREBAUGH	Map scale:	24000
Altitude:	160.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5.		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Middle San JoaquinLower Chowchilla. California. Area = 2640 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19510417
Date inventoried:	19510906	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	ALLUVIUM ABOVE E-CLAY		
Well depth:	246	Hole depth:	246
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	1968-07-17
Water quality data end date:	1968-07-17	Water quality data count:	1
Ground water data begin date:	1952-05-01	Ground water data end date:	1952-05-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1952-05-01	29.00	

Map ID:	42		
Agency cd:	USGS	Site no:	364657120230901
Site name:	013S014E25J001M		
Latitude:	364657	EDR Site id:	USGS3202283
Longitude:	1202309	Dec lat:	36.78244955
Dec lon:	-120.3868361	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	019
Country:	US	Land net:	Not Reported
Location map:	FIREBAUGH	Map scale:	24000
Altitude:	165.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5.		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Middle San JoaquinLower Chowchilla. California. Area = 2640 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	19510905	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	221	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1958-05-01	Ground water data end date:	1958-05-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1958-05-01	33.00	

Map ID:	45		
Agency cd:	USGS	Site no:	364652120201901
Site name:	013S015E21Q001M		
Latitude:	364652	EDR Site id:	USGS3202280
Longitude:	1202019	Dec lat:	36.7810604
Dec lon:	-120.33961239	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	019
Country:	US	Land net:	SESWSES21 T13S R15E M
Location map:	MENDOTA DAM	Map scale:	24000
Altitude:	160.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5.		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Middle San JoaquinLower Chowchilla. California. Area = 2640 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	19561127	Mean greenwich time offset:	PST

Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	Not Reported	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	0000-00-00	Ground water data end date:	0000-00-00
Ground water data count:	0		

Ground-water levels, Number of Measurements: 0

Map ID:	47		
Agency cd:	USGS	Site no:	364651120220901
Site name:	013S015E30A002M		
Latitude:	364651	EDR Site id:	USGS3202279
Longitude:	1202209	Dec lat:	36.78078281
Dec lon:	-120.37016888	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	019
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	165.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	2.5		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Middle San JoaquinLower Chowchilla. California. Area = 2640 sq.mi.		
Topographic:	Not Reported		
Site type:	Ground-water other than Spring	Date construction:	19480101
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	265	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

Map ID:	47		
Agency cd:	USGS	Site no:	364650120221601
Site name:	013S015E19R001M		
Latitude:	364650	EDR Site id:	USGS3202276
Longitude:	1202216	Dec lat:	36.78050505
Dec lon:	-120.37211337	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	019
Country:	US	Land net:	NWSESES19 T13S R15E M
Location map:	MENDOTA DAM	Map scale:	24000
Altitude:	155.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5.		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Middle San JoaquinLower Chowchilla. California. Area = 2640 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	1956
Date inventoried:	19680611	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	247	Hole depth:	Not Reported
Source of depth data:	reporting agency (generally USGS)		
Project number:	Not Reported		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1958-04-01	Ground water data end date:	1958-04-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1958-04-01	22.00	

Map ID:	47		
Agency cd:	USGS	Site no:	364649120222401
Site name:	013S015E19Q002M		
Latitude:	364649	EDR Site id:	USGS3202275
Longitude:	1202224	Dec lat:	36.78022729
Dec lon:	-120.37433565	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	079
Country:	US	Land net:	Not Reported
Location map:	MENDOTA DAM	Map scale:	24000
Altitude:	157.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	2.5		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Middle San JoaquinLower Chowchilla. California. Area = 2640 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19790720
Date inventoried:	Not Reported	Mean greenwich time offset:	PST

Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	200	Hole depth:	210
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1979-07-20	Ground water data end date:	1979-07-20
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1979-07-20	20.00	

Map ID:	47		
Agency cd:	USGS	Site no:	364647120221901
Site name:	013S015E19Q001M		
Latitude:	364647	EDR Site id:	USGS3202274
Longitude:	1202219	Dec lat:	36.77967174
Dec lon:	-120.37294671	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	019
Country:	US	Land net:	Not Reported
Location map:	MENDOTA DAM	Map scale:	24000
Altitude:	160.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	2.5		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Middle San JoaquinLower Chowchilla. California. Area = 2640 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19780817
Date inventoried:	19810120	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	213	Hole depth:	222
Source of depth data:	Not Reported		
Project number:	479435800		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1978-08-17	Ground water data end date:	1978-08-17
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1978-08-17	30.00	

Map ID:	50		
Agency cd:	USGS	Site no:	364640120220701
Site name:	013S015E30A001M		
Latitude:	364640	EDR Site id:	USGS3202417
Longitude:	1202207	Dec lat:	36.7777273
Dec lon:	-120.36961321	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	019
Country:	US	Land net:	Not Reported
Location map:	MENDOTA DAM	Map scale:	24000
Altitude:	165.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5.		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Middle San JoaquinLower Chowchilla. California. Area = 2640 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	19480118
Date inventoried:	19510905	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	265	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1962-09-01	Ground water data end date:	1962-09-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1962-09-01	41.00	

Map ID:	51		
Agency cd:	USGS	Site no:	364636120223601
Site name:	013S015E30B002M		
Latitude:	364636	EDR Site id:	USGS3202406
Longitude:	1202236	Dec lat:	36.77661626
Dec lon:	-120.37766898	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	019
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	161.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5.		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Middle San JoaquinLower Chowchilla. California. Area = 2640 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19480101
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	240	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1959-05-01	Ground water data end date:	1959-05-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1959-05-01	28.00	

Map ID:	51		
Agency cd:	USGS	Site no:	364636120222401
Site name:	013S015E30B006M		
Latitude:	364636	EDR Site id:	USGS3202405
Longitude:	1202224	Dec lat:	36.77661624
Dec lon:	-120.37433555	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	019
Country:	US	Land net:	NWNWNES30 T13S R15E M
Location map:	MENDOTA DAM	Map scale:	24000
Altitude:	163.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5.		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Middle San JoaquinLower Chowchilla. California. Area = 2640 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	19650424
Date inventoried:	19680610	Mean greenwich time offset:	PST

Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	ALLUVIUM ABOVE E-CLAY		
Well depth:	240	Hole depth:	Not Reported
Source of depth data:	other reported		
Project number:	Not Reported		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	1968-07-17
Water quality data end date:	1968-07-17	Water quality data count:	1
Ground water data begin date:	0000-00-00	Ground water data end date:	0000-00-00
Ground water data count:	0		

Ground-water levels, Number of Measurements: 0

Map ID:	51		
Agency cd:	USGS	Site no:	364634120221901
Site name:	SUMP 013S015E30-1 M		
Latitude:	364634	EDR Site id:	USGS3202400
Longitude:	1202219	Dec lat:	36.77606068
Dec lon:	-120.3729466	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	019
Country:	US	Land net:	Not Reported
Location map:	MENDOTA DAM	Map scale:	24000
Altitude:	162		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	2.5		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Middle San JoaquinLower Chowchilla. California. Area = 2640 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Collector or Ranney type well		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	Not Reported	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	1984-05-10
Water quality data end date:	1984-05-10	Water quality data count:	1
Ground water data begin date:	0000-00-00	Ground water data end date:	0000-00-00
Ground water data count:	0		

Ground-water levels, Number of Measurements: 0

Map ID:	54		
Agency cd:	USGS	Site no:	364634120214001
Site name:	013S015E29C001M		
Latitude:	364634	EDR Site id:	USGS3202399
Longitude:	1202140	Dec lat:	36.77606062
Dec lon:	-120.36211293	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	019
Country:	US	Land net:	Not Reported
Location map:	MENDOTA DAM	Map scale:	24000
Altitude:	160.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	2.5		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Middle San JoaquinLower Chowchilla. California. Area = 2640 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19711008
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	50.0	Hole depth:	50.0
Source of depth data:	driller		
Project number:	479435800		
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

Map ID:	51		
Agency cd:	USGS	Site no:	364632120223401
Site name:	013S015E30B001M		
Latitude:	364632	EDR Site id:	USGS3202395
Longitude:	1202234	Dec lat:	36.77550516
Dec lon:	-120.37711338	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	019
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	160.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5.		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Middle San JoaquinLower Chowchilla. California. Area = 2640 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19490101
Date inventoried:	Not Reported	Mean greenwich time offset:	PST

Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	270	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

Map ID:	51		
Agency cd:	USGS	Site no:	364632120223403
Site name:	013S015E30B004M		
Latitude:	364632	EDR Site id:	USGS3202397
Longitude:	1202234	Dec lat:	36.77550516
Dec lon:	-120.37711338	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	019
Country:	US	Land net:	Not Reported
Location map:	MENDOTA DAM	Map scale:	24000
Altitude:	160.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5.		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Middle San JoaquinLower Chowchilla. California. Area = 2640 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	19640930
Date inventoried:	19680610	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	250	Hole depth:	Not Reported
Source of depth data:	other reported		
Project number:	Not Reported		
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

Map ID:	51		
Agency cd:	USGS	Site no:	364632120223402
Site name:	013S015E30B003M		
Latitude:	364632	EDR Site id:	USGS3202396
Longitude:	1202234	Dec lat:	36.77550516
Dec lon:	-120.37711338	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	019
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	160.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5.		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Middle San JoaquinLower Chowchilla. California. Area = 2640 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19510101
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	266	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

Map ID:	51		
Agency cd:	USGS	Site no:	364632120223404
Site name:	013S015E30B005M		
Latitude:	364632	EDR Site id:	USGS3202398
Longitude:	1202234	Dec lat:	36.77550516
Dec lon:	-120.37711338	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	019
Country:	US	Land net:	Not Reported
Location map:	MENDOTA DAM	Map scale:	24000
Altitude:	160.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5.		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Middle San JoaquinLower Chowchilla. California. Area = 2640 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	19661214
Date inventoried:	19680610	Mean greenwich time offset:	PST

Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	270	Hole depth:	Not Reported
Source of depth data:	other reported		
Project number:	Not Reported		
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

Map ID:	51		
Agency cd:	USGS	Site no:	364631120223902
Site name:	013S015E30C003M		
Latitude:	364631	EDR Site id:	USGS3202393
Longitude:	1202239	Dec lat:	36.7752274
Dec lon:	-120.3785023	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	019
Country:	US	Land net:	NWNENWS30 T13S R15E M
Location map:	FIREBAUGH	Map scale:	24000
Altitude:	160.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5.		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Middle San JoaquinLower Chowchilla. California. Area = 2640 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	19640627
Date inventoried:	19680610	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	225	Hole depth:	Not Reported
Source of depth data:	other reported		
Project number:	Not Reported		
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

Map ID:	51		
Agency cd:	USGS	Site no:	364631120223901
Site name:	013S015E30C001M		
Latitude:	364631	EDR Site id:	USGS3202392
Longitude:	1202239	Dec lat:	36.7752274
Dec lon:	-120.3785023	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	019
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	160.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5.		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Middle San JoaquinLower Chowchilla. California. Area = 2640 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	240	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1960-05-01	Ground water data end date:	1960-05-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1960-05-01	34.00	

Map ID:	57		
Agency cd:	USGS	Site no:	364631120171401
Site name:	013S015E25F002M		
Latitude:	364631	EDR Site id:	USGS3202391
Longitude:	1201714	Dec lat:	36.77522684
Dec lon:	-120.28822175	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	039
Country:	US	Land net:	NESENWS25 T13S R15E M
Location map:	MENDOTA DAM	Map scale:	24000
Altitude:	175.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5.		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Middle San JoaquinLower Chowchilla. California. Area = 2640 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	19400404
Date inventoried:	19520911	Mean greenwich time offset:	PST

Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	120	Hole depth:	160
Source of depth data:	other reported		
Project number:	Not Reported		
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

Map ID:	56		
Agency cd:	USGS	Site no:	364630120165101
Site name:	013S015E25A002M		
Latitude:	364630	EDR Site id:	USGS3202388
Longitude:	1201651	Dec lat:	36.77494903
Dec lon:	-120.28183266	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	039
Country:	US	Land net:	SENENES25 T13S R15E M
Location map:	MENDOTA DAM	Map scale:	24000
Altitude:	173		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Middle San JoaquinLower Chowchilla. California. Area = 2640 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	19561212	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	Not Reported	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

Map ID:	58		
Agency cd:	USGS	Site no:	364630120163601
Site name:	013S015E25A001M		
Latitude:	364630	EDR Site id:	USGS3202387
Longitude:	1201636	Dec lat:	36.774949
Dec lon:	-120.27766586	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	039
Country:	US	Land net:	SENENES25 T13S R15E M
Location map:	MENDOTA DAM	Map scale:	24000
Altitude:	173.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5.		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Middle San JoaquinLower Chowchilla. California. Area = 2640 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	19561212	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	Not Reported	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

Map ID:	51		
Agency cd:	USGS	Site no:	364629120224401
Site name:	013S015E30F001M		
Latitude:	364629	EDR Site id:	USGS3202385
Longitude:	1202244	Dec lat:	36.77467186
Dec lon:	-120.37989122	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	019
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	160.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5.		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Middle San JoaquinLower Chowchilla. California. Area = 2640 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19480101
Date inventoried:	Not Reported	Mean greenwich time offset:	PST

Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	265	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1960-05-01	Ground water data end date:	1960-05-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1960-05-01	35.00	

Map ID:	51		
Agency cd:	USGS	Site no:	364629120224402
Site name:	013S015E30F002M		
Latitude:	364629	EDR Site id:	USGS3202386
Longitude:	1202244	Dec lat:	36.77467186
Dec lon:	-120.37989122	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	019
Country:	US	Land net:	NESENWS30 T13S R15E M
Location map:	FIREBAUGH	Map scale:	24000
Altitude:	160.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5.		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Middle San JoaquinLower Chowchilla. California. Area = 2640 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	19660319
Date inventoried:	19680610	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	242	Hole depth:	Not Reported
Source of depth data:	other reported		
Project number:	Not Reported		
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

Map ID:	51		
Agency cd:	USGS	Site no:	364629120223001
Site name:	013S015E30B007M		
Latitude:	364629	EDR Site id:	USGS3202384
Longitude:	1202230	Dec lat:	36.77467184
Dec lon:	-120.37600221	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	019
Country:	US	Land net:	NWNWSES30 T13S R15E M
Location map:	FIREBAUGH	Map scale:	24000
Altitude:	159.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5.		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Middle San JoaquinLower Chowchilla. California. Area = 2640 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	19610414
Date inventoried:	19680611	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	172	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

Map ID:	59		
Agency cd:	USGS	Site no:	364629120195701
Site name:	013S015E28H001M		
Latitude:	364629	EDR Site id:	USGS3202383
Longitude:	1201957	Dec lat:	36.77467157
Dec lon:	-120.3335009	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	019
Country:	US	Land net:	NENESES28 T13S R15E M
Location map:	MENDOTA DAM	Map scale:	24000
Altitude:	165.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5.		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Middle San JoaquinLower Chowchilla. California. Area = 2640 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	19561127	Mean greenwich time offset:	PST

Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	400	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

Map ID:	60		
Agency cd:	USGS	Site no:	364626120225402
Site name:	013S015E30E003M		
Latitude:	364626	EDR Site id:	USGS3202381
Longitude:	1202254	Dec lat:	36.77383856
Dec lon:	-120.38266905	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	019
Country:	US	Land net:	NESWNWS30 T13S R15E M
Location map:	FIREBAUGH	Map scale:	24000
Altitude:	160.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5.		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Middle San JoaquinLower Chowchilla. California. Area = 2640 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	19660323
Date inventoried:	19680610	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	275	Hole depth:	Not Reported
Source of depth data:	other reported		
Project number:	Not Reported		
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

Map ID:	60		
Agency cd:	USGS	Site no:	364626120225401
Site name:	013S015E30E001M		
Latitude:	364626	EDR Site id:	USGS3202380
Longitude:	1202254	Dec lat:	36.77383856
Dec lon:	-120.38266905	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	019
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	160.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5.		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Middle San JoaquinLower Chowchilla. California. Area = 2640 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19480101
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	260	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1960-05-01	Ground water data end date:	1960-05-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1960-05-01	37.00	

Map ID:	61		
Agency cd:	USGS	Site no:	364624120192001
Site name:	013S015E27F001M		
Latitude:	364624	EDR Site id:	USGS3202378
Longitude:	1201920	Dec lat:	36.77328264
Dec lon:	-120.32322277	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	019
Country:	US	Land net:	Not Reported
Location map:	MENDOTA DAM	Map scale:	24000
Altitude:	165.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	2.5		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Middle San JoaquinLower Chowchilla. California. Area = 2640 sq.mi.		
Topographic:	Flood plain		
Site type:	Ground-water other than Spring	Date construction:	19580228
Date inventoried:	19620913	Mean greenwich time offset:	PST

Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	301	Hole depth:	302
Source of depth data:	driller		
Project number:	Not Reported		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1958-02-17	Ground water data end date:	1963-10-01
Ground water data count:	2		

Ground-water levels, Number of Measurements: 2

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1963-10-01	40.5		1958-02-17	37.5	

Map ID:	57		
Agency cd:	USGS	Site no:	364624120171101
Site name:	013S015E25F001M		
Latitude:	364624	EDR Site id:	USGS3202377
Longitude:	1201711	Dec lat:	36.77328242
Dec lon:	-120.28738834	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	039
Country:	US	Land net:	NESENWS25 T13S R15E M
Location map:	MENDOTA DAM	Map scale:	24000
Altitude:	175.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5.		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Middle San JoaquinLower Chowchilla. California. Area = 2640 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	1951
Date inventoried:	19520911	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	242	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

Map ID:	62		
Agency cd:	USGS	Site no:	364623120181301
Site name:	013S015E26G001M		
Latitude:	364623	EDR Site id:	USGS3202376
Longitude:	1201813	Dec lat:	36.77300475
Dec lon:	-120.30461108	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	039
Country:	US	Land net:	NWSWNES26 T13S R15E M
Location map:	MENDOTA DAM	Map scale:	24000
Altitude:	170.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5.		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Middle San JoaquinLower Chowchilla. California. Area = 2640 sq.mi.		
Topographic:	Flood plain		
Site type:	Ground-water other than Spring	Date construction:	19510701
Date inventoried:	19510911	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	245	Hole depth:	Not Reported
Source of depth data:	other reported		
Project number:	Not Reported		
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

Map ID:	64		
Agency cd:	USGS	Site no:	364622120230301
Site name:	013S015E30E002M		
Latitude:	364622	EDR Site id:	USGS3202372
Longitude:	1202303	Dec lat:	36.77272748
Dec lon:	-120.3851691	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	019
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	162.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5.		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Middle San JoaquinLower Chowchilla. California. Area = 2640 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19470101
Date inventoried:	Not Reported	Mean greenwich time offset:	PST

Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	225	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1960-05-01	Ground water data end date:	1960-05-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1960-05-01	38.00	

Map ID:	64		
Agency cd:	USGS	Site no:	364622120230302
Site name:	013S015E30E004M		
Latitude:	364622	EDR Site id:	USGS3202373
Longitude:	1202303	Dec lat:	36.77272748
Dec lon:	-120.3851691	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	019
Country:	US	Land net:	SWSWNWS30 T13S R15E M
Location map:	FIREBAUGH	Map scale:	24000
Altitude:	160.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5.		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Middle San JoaquinLower Chowchilla. California. Area = 2640 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	19650630
Date inventoried:	19680610	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	235	Hole depth:	Not Reported
Source of depth data:	other reported		
Project number:	Not Reported		
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

Map ID:	65		
Agency cd:	USGS	Site no:	364620120175701
Site name:	013S015E26H001M		
Latitude:	364620	EDR Site id:	USGS3202368
Longitude:	1201757	Dec lat:	36.7721714
Dec lon:	-120.30016648	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	039
Country:	US	Land net:	SWSENES26 T13S R15E M
Location map:	MENDOTA DAM	Map scale:	24000
Altitude:	170.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Middle San JoaquinLower Chowchilla. California. Area = 2640 sq.mi.		
Topographic:	Flood plain		
Site type:	Ground-water other than Spring	Date construction:	19510701
Date inventoried:	19510911	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	278	Hole depth:	278
Source of depth data:	other reported		
Project number:	Not Reported		
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

Map ID:	66		
Agency cd:	USGS	Site no:	364618120223301
Site name:	013S015E30G001M		
Latitude:	364618	EDR Site id:	USGS3202365
Longitude:	1202233	Dec lat:	36.77161633
Dec lon:	-120.37683548	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	019
Country:	US	Land net:	SESWNES30 T13S R15E M
Location map:	FIREBAUGH	Map scale:	24000
Altitude:	159.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5.		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Middle San JoaquinLower Chowchilla. California. Area = 2640 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	19561101
Date inventoried:	19580611	Mean greenwich time offset:	PST

Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	80.0	Hole depth:	80
Source of depth data:	driller		
Project number:	Not Reported		
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

Map ID:	67		
Agency cd:	USGS	Site no:	364615120201001
Site name:	013S015E28G001M		
Latitude:	364615	EDR Site id:	USGS3202360
Longitude:	1202010	Dec lat:	36.77078277
Dec lon:	-120.33711201	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	019
Country:	US	Land net:	Not Reported
Location map:	MENDOTA DAM	Map scale:	24000
Altitude:	162.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5.		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Middle San JoaquinLower Chowchilla. California. Area = 2640 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	19600906
Date inventoried:	19630417	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	276	Hole depth:	Not Reported
Source of depth data:	other reported		
Project number:	Not Reported		
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

Map ID:	66		
Agency cd:	USGS	Site no:	364613120223502
Site name:	SLD @ MI 127.0		
Latitude:	364613	EDR Site id:	USGS3202353
Longitude:	1202235	Dec lat:	36.77022747
Dec lon:	-120.37739101	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	019
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	Not Reported		
Altitude method:	Not Reported		
Altitude accuracy:	2.5		
Altitude datum:	Not Reported		
Hydrologic:	TulareBuena Vista Lakes. California. Area = 8510 sq.mi.		
Topographic:	Not Reported		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	Not Reported	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	1984-08-08
Water quality data end date:	1984-08-08	Water quality data count:	1
Ground water data begin date:	0000-00-00	Ground water data end date:	0000-00-00
Ground water data count:	0		

Ground-water levels, Number of Measurements: 0

Map ID:	66		
Agency cd:	USGS	Site no:	364613120223501
Site name:	SLD COLLECTOR @ MI 127.05		
Latitude:	364613	EDR Site id:	USGS3202352
Longitude:	1202235	Dec lat:	36.77022747
Dec lon:	-120.37739101	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	019
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	Not Reported		
Altitude method:	Not Reported		
Altitude accuracy:	2.5		
Altitude datum:	Not Reported		
Hydrologic:	TulareBuena Vista Lakes. California. Area = 8510 sq.mi.		
Topographic:	Not Reported		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	Not Reported	Mean greenwich time offset:	PST

Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	Not Reported	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	1984-01-24
Water quality data end date:	1984-08-08	Water quality data count:	2
Ground water data begin date:	0000-00-00	Ground water data end date:	0000-00-00
Ground water data count:	0		

Ground-water levels, Number of Measurements: 0

Map ID:	71		
Agency cd:	USGS	Site no:	364613120175801
Site name:	013S015E26K001M		
Latitude:	364613	EDR Site id:	USGS3202351
Longitude:	1201758	Dec lat:	36.77022699
Dec lon:	-120.30044421	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	039
Country:	US	Land net:	SENWSES26 T13S R15E M
Location map:	MENDOTA DAM	Map scale:	24000
Altitude:	170.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5.		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Middle San JoaquinLower Chowchilla. California. Area = 2640 sq.mi.		
Topographic:	Flood plain		
Site type:	Ground-water other than Spring	Date construction:	19510701
Date inventoried:	19510911	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	242	Hole depth:	Not Reported
Source of depth data:	other reported		
Project number:	Not Reported		
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

Map ID:	68		
Agency cd:	USGS	Site no:	364616120150301
Site name:	013S016E30L001M		
Latitude:	364612	EDR Site id:	USGS3202361
Longitude:	1201607	Dec lat:	36.76994902
Dec lon:	-120.26960992	Coor meth:	M
Coor accr:	M	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	019
Country:	US	Land net:	S30 T13S R16E M
Location map:	MENDOTA DAM	Map scale:	24000
Altitude:	175.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	52		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Middle San JoaquinLower Chowchilla. California. Area = 2640 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	19741108	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	300	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1963-10-01	Ground water data end date:	1963-10-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1963-10-01	54.50	

Map ID:	70		
Agency cd:	USGS	Site no:	364611120172301
Site name:	013S015E25L001M		
Latitude:	364611	EDR Site id:	USGS3202350
Longitude:	1201723	Dec lat:	36.76967138
Dec lon:	-120.29072167	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	039
Country:	US	Land net:	NWNESWS25 T13S R15E M
Location map:	MENDOTA DAM	Map scale:	24000
Altitude:	172.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5.		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Middle San JoaquinLower Chowchilla. California. Area = 2640 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	195106
Date inventoried:	19520911	Mean greenwich time offset:	PST

Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	268	Hole depth:	Not Reported
Source of depth data:	other reported		
Project number:	Not Reported		
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

Map ID:	78		
Agency cd:	USGS	Site no:	364553120172901
Site name:	013S015E25N001M		
Latitude:	364553	EDR Site id:	USGS3202343
Longitude:	1201729	Dec lat:	36.76467146
Dec lon:	-120.29238825	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	039
Country:	US	Land net:	SESWSWS25 T13S R15E M
Location map:	MENDOTA DAM	Map scale:	24000
Altitude:	170.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Middle San JoaquinLower Chowchilla. California. Area = 2640 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	19510701
Date inventoried:	19520911	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	268	Hole depth:	Not Reported
Source of depth data:	other reported		
Project number:	Not Reported		
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

Map ID:	77		
Agency cd:	USGS	Site no:	364553120172001
Site name:	013S015E25P001M		
Latitude:	364553	EDR Site id:	USGS3202342
Longitude:	1201720	Dec lat:	36.76467145
Dec lon:	-120.28988817	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	039
Country:	US	Land net:	SESESWS25 T13S R15E M
Location map:	MENDOTA DAM	Map scale:	24000
Altitude:	170.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5.		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Middle San JoaquinLower Chowchilla. California. Area = 2640 sq.mi.		
Topographic:	Flood plain		
Site type:	Ground-water other than Spring	Date construction:	19510601
Date inventoried:	19520911	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	258	Hole depth:	Not Reported
Source of depth data:	other reported		
Project number:	Not Reported		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1964-08-01	Ground water data end date:	1964-08-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1964-08-01	87.00	

Map ID:	81		
Agency cd:	USGS	Site no:	364544120184601
Site name:	013S015E35D004M		
Latitude:	364544	EDR Site id:	USGS3202484
Longitude:	1201846	Dec lat:	36.76217164
Dec lon:	-120.31377772	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	019
Country:	US	Land net:	Not Reported
Location map:	MENDOTA DAM	Map scale:	24000
Altitude:	165.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5.		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	TulareBuena Vista Lakes. California. Area = 8510 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	19520724
Date inventoried:	19620919	Mean greenwich time offset:	PST

Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	51.0	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1962-09-01	Ground water data end date:	1962-09-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1962-09-01	15.00	

Map ID:	82		
Agency cd:	USGS	Site no:	364539120223501
Site name:	013S015E31B001M		
Latitude:	364539	EDR Site id:	USGS3202481
Longitude:	1202235	Dec lat:	36.76078318
Dec lon:	-120.37739073	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	019
Country:	US	Land net:	SWNWNES31 T13S R15E M
Location map:	FIREBAUGH	Map scale:	24000
Altitude:	165.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5.		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Middle San JoaquinLower Chowchilla. California. Area = 2640 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	19530912
Date inventoried:	19530912	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	324	Hole depth:	Not Reported
Source of depth data:	other reported		
Project number:	Not Reported		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1959-05-01	Ground water data end date:	1959-05-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1959-05-01	51.00	

Map ID:	83		
Agency cd:	USGS	Site no:	364536120184801
Site name:	013S015E34A001M		
Latitude:	364536	EDR Site id:	USGS3202479
Longitude:	1201848	Dec lat:	36.75994945
Dec lon:	-120.31433323	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	019
Country:	US	Land net:	Not Reported
Location map:	MENDOTA DAM	Map scale:	24000
Altitude:	165.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5.		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	TulareBuena Vista Lakes. California. Area = 8510 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	19580222
Date inventoried:	19620913	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	280	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

Map ID:	83		
Agency cd:	USGS	Site no:	364536120184301
Site name:	013S015E35D005M		
Latitude:	364536	EDR Site id:	USGS3202478
Longitude:	1201843	Dec lat:	36.75994944
Dec lon:	-120.31294429	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	019
Country:	US	Land net:	S35T13SR15EM
Location map:	MENDOTA DAM	Map scale:	24000

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Altitude:	165.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	2		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	TulareBuena Vista Lakes. California. Area = 8510 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19650411
Date inventoried:	19660318	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	433	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	479400204		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	1965-08-27
Water quality data end date:	1965-08-27	Water quality data count:	1
Ground water data begin date:	1965-08-26	Ground water data end date:	1983-01-03
Ground water data count:	3651		

Ground-water levels, Number of Measurements: 3651

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1983-01-03	31.7		1982-12-27	32.4	
1982-12-26	32.7		1982-12-23	32.8	
1982-12-22	33.1		1982-12-21	33.2	
1982-12-14	33.3		1982-12-09	33.4	
1982-12-08	33.7		1982-12-07	33.7	
1982-12-06	34.2		1982-12-03	34.3	
1982-12-02	34.5		1982-12-01	34.8	
1982-11-30	35.0		1982-11-29	35.2	
1982-11-25	35.3		1982-11-24	35.4	
1982-11-23	36.0		1982-11-19	36.1	
1982-11-17	36.2		1982-11-14	36.3	
1982-11-13	36.7		1982-11-12	37.2	
1982-11-11	37.2		1982-11-10	37.4	
1982-11-09	38.1		1982-11-08	38.2	
1982-11-07	38.4		1982-11-06	38.6	
1982-11-05	39.2		1982-11-04	39.8	
1982-11-03	40.2		1982-11-02	40.3	
1982-11-01	41.0		1982-10-31	41.3	
1982-10-30	42.1		1982-10-29	42.2	
1982-10-28	43.0		1982-10-27	43.9	
1982-10-26	44.2		1982-10-25	44.2	
1982-10-24	45.1		1982-10-23	45.2	
1982-10-20	45.3		1982-10-18	45.2	
1982-10-15	45.1		1982-10-14	44.9	
1982-10-13	45.1		1982-10-12	45.3	
1982-10-11	46.1		1982-10-10	46.3	
1982-10-09	46.4		1982-10-08	46.5	
1982-10-07	46.7		1982-10-06	47.2	
1982-10-05	47.6		1982-10-04	48.4	
1982-10-03	49.2		1982-10-02	50.1	
1982-10-01	50.1		1982-09-30	50.2	
1982-09-29	50.2		1982-09-28	50.2	

Ground-water levels, continued.

Date	Feet below Surface	Feet to Sealevel
1982-09-27	51.2	
1982-09-25	53.0	
1982-09-23	54.0	
1982-09-21	55.3	
1982-09-19	55.5	
1982-09-17	55.2	
1982-09-15	56.2	
1982-09-13	57.2	
1982-09-11	59.1	
1982-09-09	60.2	
1982-09-07	62.1	
1982-09-05	64.0	
1982-09-03	67.1	
1982-09-01	69.1	
1982-08-30	70.0	
1982-08-28	68.9	
1982-08-26	67.1	
1982-08-24	67.7	
1982-08-22	68.8	
1982-08-20	68.7	
1982-08-18	68.9	
1982-08-16	69.9	
1982-08-14	71.9	
1982-08-12	71.9	
1982-08-10	70.9	
1982-08-08	70.5	
1982-08-06	69.9	
1982-08-04	69.9	
1982-08-02	69.7	
1982-07-31	67.0	
1982-07-29	66.1	
1982-07-27	65.0	
1982-07-25	64.4	
1982-07-23	62.5	
1982-07-21	60.9	
1982-07-19	58.9	
1982-07-17	57.4	
1982-07-15	56.7	
1982-07-13	56.2	
1982-07-11	58.9	
1982-07-09	59.1	
1982-07-07	60.2	
1982-07-05	61.0	
1982-07-03	61.1	
1982-07-01	61.0	
1982-06-29	61.1	
1982-06-27	61.0	
1982-06-25	60.9	
1982-06-23	59.2	
1982-06-21	56.8	
1982-06-19	53.9	
1982-06-17	51.1	
1982-06-15	50.6	
1982-06-13	49.9	
1982-06-11	50.1	

Date	Feet below Surface	Feet to Sealevel
1982-09-26	52.2	
1982-09-24	53.2	
1982-09-22	55.1	
1982-09-20	55.7	
1982-09-18	55.1	
1982-09-16	56.0	
1982-09-14	57.2	
1982-09-12	58.2	
1982-09-10	59.6	
1982-09-08	61.2	
1982-09-06	62.2	
1982-09-04	65.4	
1982-09-02	68.2	
1982-08-31	69.9	
1982-08-29	70.0	
1982-08-27	67.8	
1982-08-25	67.3	
1982-08-23	67.2	
1982-08-21	68.7	
1982-08-19	68.7	
1982-08-17	69.9	
1982-08-15	71.9	
1982-08-13	71.9	
1982-08-11	71.9	
1982-08-09	70.9	
1982-08-07	69.9	
1982-08-05	69.9	
1982-08-03	69.9	
1982-08-01	69.0	
1982-07-30	66.4	
1982-07-28	65.9	
1982-07-26	64.9	
1982-07-24	63.0	
1982-07-22	61.8	
1982-07-20	59.7	
1982-07-18	57.9	
1982-07-16	57.0	
1982-07-14	56.1	
1982-07-12	56.9	
1982-07-10	59.0	
1982-07-08	59.9	
1982-07-06	61.0	
1982-07-04	61.0	
1982-07-02	61.0	
1982-06-30	61.2	
1982-06-28	61.0	
1982-06-26	61.0	
1982-06-24	59.9	
1982-06-22	58.0	
1982-06-20	54.9	
1982-06-18	52.6	
1982-06-16	50.9	
1982-06-14	50.0	
1982-06-12	49.9	
1982-06-10	50.3	

Ground-water levels, continued.

Date	Feet below Surface	Feet to Sealevel
1982-06-09	50.3	
1982-06-07	51.1	
1982-04-29	48.1	
1982-04-27	45.7	
1982-04-25	42.3	
1982-04-23	38.6	
1982-04-21	37.7	
1982-04-19	34.8	
1982-04-17	34.8	
1982-04-15	35.7	
1982-04-13	36.5	
1982-04-11	38.0	
1982-04-09	38.7	
1982-04-07	40.7	
1982-04-05	43.5	
1982-04-03	44.8	
1982-04-01	45.9	
1982-03-30	46.8	
1982-03-28	47.4	
1982-03-26	47.8	
1982-03-24	49.9	
1982-03-22	52.5	
1982-03-20	57.8	
1982-03-18	62.2	
1982-03-16	63.7	
1982-03-14	64.5	
1982-03-12	63.5	
1982-03-10	61.4	
1982-03-08	60.6	
1982-03-06	60.6	
1982-03-04	60.4	
1982-03-02	59.6	
1982-02-28	56.5	
1982-02-26	54.4	
1982-02-24	52.8	
1982-02-22	52.1	
1982-02-20	50.3	
1982-02-18	48.2	
1982-02-16	48.0	
1982-02-14	47.5	
1982-02-12	46.4	
1982-02-10	44.5	
1982-02-08	43.4	
1982-02-06	42.1	
1982-02-04	41.1	
1982-02-02	40.6	
1982-01-31	39.6	
1982-01-29	39.3	
1982-01-27	37.4	
1982-01-25	36.9	
1982-01-23	37.5	
1982-01-21	38.3	
1981-09-15	69.7	
1981-07-13	90.4	
1981-07-11	90.7	

Date	Feet below Surface	Feet to Sealevel
1982-06-08	51.0	
1982-04-30	48.8	
1982-04-28	47.3	
1982-04-26	43.8	
1982-04-24	40.3	
1982-04-22	38.4	
1982-04-20	36.7	
1982-04-18	34.3	
1982-04-16	34.8	
1982-04-14	35.9	
1982-04-12	37.0	
1982-04-10	38.3	
1982-04-08	39.7	
1982-04-06	41.9	
1982-04-04	44.8	
1982-04-02	45.8	
1982-03-31	46.3	
1982-03-29	47.0	
1982-03-27	47.6	
1982-03-25	49.0	
1982-03-23	51.4	
1982-03-21	54.2	
1982-03-19	59.7	
1982-03-17	63.6	
1982-03-15	64.5	
1982-03-13	64.3	
1982-03-11	62.5	
1982-03-09	60.5	
1982-03-07	60.8	
1982-03-05	60.4	
1982-03-03	59.9	
1982-03-01	58.5	
1982-02-27	55.6	
1982-02-25	53.4	
1982-02-23	52.4	
1982-02-21	51.1	
1982-02-19	49.3	
1982-02-17	47.7	
1982-02-15	47.9	
1982-02-13	47.4	
1982-02-11	45.5	
1982-02-09	43.9	
1982-02-07	42.5	
1982-02-05	41.4	
1982-02-03	40.5	
1982-02-01	40.4	
1982-01-30	39.4	
1982-01-28	38.5	
1982-01-26	36.9	
1982-01-24	37.2	
1982-01-22	38.2	
1981-11-18	40.6	
1981-07-14	89.3	
1981-07-12	90.5	
1981-07-10	90.8	

Ground-water levels, continued.

Date	Feet below Surface	Feet to Sealevel
1981-07-09	90.6	
1981-07-07	90.4	
1981-07-05	89.1	
1981-07-03	87.7	
1981-07-01	86.2	
1981-06-29	82.3	
1981-06-27	81.7	
1981-06-25	80.4	
1981-06-23	79.6	
1981-06-21	75.7	
1981-06-19	69.5	
1981-06-17	65.3	
1981-06-15	62.7	
1981-06-13	61.9	
1981-06-11	61.6	
1981-06-09	61.4	
1981-06-07	61.1	
1981-06-05	61.3	
1981-06-03	62.4	
1981-06-01	62.9	
1981-05-30	63.0	
1981-05-28	62.0	
1981-05-26	61.1	
1981-05-24	61.2	
1981-05-22	60.9	
1981-05-20	60.0	
1981-05-18	61.1	
1981-05-16	64.7	
1981-05-14	66.7	
1981-05-12	65.9	
1981-05-10	65.3	
1981-05-08	63.8	
1981-05-06	63.0	
1981-05-04	60.2	
1981-05-02	56.4	
1981-04-30	53.7	
1981-04-28	52.6	
1981-04-23	53.1	
1981-04-21	55.3	
1981-04-19	57.8	
1981-04-16	59.0	
1981-04-14	57.5	
1981-04-12	53.1	
1981-04-10	48.4	
1981-04-08	42.8	
1981-04-06	40.4	
1981-04-01	40.6	
1981-03-30	42.0	
1981-03-28	42.6	
1981-03-26	44.8	
1981-03-24	45.9	
1981-03-22	46.4	
1981-03-19	46.6	
1981-03-17	47.3	
1981-03-15	51.2	

Date	Feet below Surface	Feet to Sealevel
1981-07-08	90.4	
1981-07-06	90.1	
1981-07-04	88.4	
1981-07-02	86.8	
1981-06-30	84.1	
1981-06-28	81.8	
1981-06-26	81.5	
1981-06-24	80.2	
1981-06-22	77.7	
1981-06-20	72.8	
1981-06-18	67.3	
1981-06-16	63.9	
1981-06-14	62.5	
1981-06-12	61.8	
1981-06-10	61.4	
1981-06-08	61.3	
1981-06-06	61.1	
1981-06-04	61.7	
1981-06-02	62.8	
1981-05-31	63.2	
1981-05-29	62.5	
1981-05-27	61.8	
1981-05-25	61.3	
1981-05-23	61.0	
1981-05-21	60.7	
1981-05-19	59.9	
1981-05-17	62.7	
1981-05-15	66.3	
1981-05-13	66.8	
1981-05-11	65.2	
1981-05-09	64.9	
1981-05-07	63.6	
1981-05-05	61.5	
1981-05-03	57.9	
1981-05-01	55.7	
1981-04-29	52.7	
1981-04-27	53.0	
1981-04-22	54.2	
1981-04-20	56.3	
1981-04-18	58.9	
1981-04-15	58.7	
1981-04-13	55.5	
1981-04-11	51.0	
1981-04-09	45.4	
1981-04-07	41.2	
1981-04-02	40.5	
1981-03-31	41.3	
1981-03-29	42.5	
1981-03-27	44.2	
1981-03-25	45.6	
1981-03-23	46.3	
1981-03-20	46.5	
1981-03-18	46.7	
1981-03-16	47.7	
1981-03-14	52.3	

Ground-water levels, continued.

Date	Feet below Surface	Feet to Sealevel
1981-03-13	52.6	
1981-03-09	52.6	
1981-03-07	52.3	
1981-03-05	52.6	
1981-03-03	52.8	
1981-03-01	53.3	
1981-02-27	53.5	
1981-02-25	55.3	
1981-02-21	54.7	
1981-02-19	52.8	
1981-02-15	52.9	
1981-02-11	53.2	
1981-02-06	53.2	
1981-02-04	52.9	
1981-02-01	52.4	
1981-01-30	50.9	
1981-01-28	48.6	
1981-01-26	47.2	
1981-01-24	45.6	
1981-01-22	44.9	
1981-01-20	44.3	
1981-01-18	43.2	
1981-01-14	42.5	
1981-01-12	41.6	
1981-01-10	40.9	
1981-01-08	38.5	
1981-01-06	36.1	
1981-01-03	35.8	
1981-01-01	36.2	
1980-12-30	36.8	
1980-12-28	37.2	
1980-12-20	37.0	
1980-12-12	37.2	
1980-12-08	37.5	
1980-12-05	37.8	
1980-11-29	38.0	
1980-11-26	38.5	
1980-11-19	38.7	
1980-11-17	39.0	
1980-09-24	53.5	
1980-09-22	53.9	
1980-09-20	55.9	
1980-09-17	57.4	
1980-09-15	58.5	
1980-09-13	61.6	
1980-09-11	65.7	
1980-09-09	68.5	
1980-09-07	71.1	
1980-09-04	71.6	
1980-09-02	71.2	
1980-08-29	70.9	
1980-08-27	71.5	
1980-08-25	73.5	
1980-08-23	75.6	
1980-08-21	77.3	

Date	Feet below Surface	Feet to Sealevel
1981-03-10	52.7	
1981-03-08	52.5	
1981-03-06	52.3	
1981-03-04	52.7	
1981-03-02	53.0	
1981-02-28	53.4	
1981-02-26	54.3	
1981-02-22	55.4	
1981-02-20	53.8	
1981-02-16	52.7	
1981-02-14	53.1	
1981-02-10	53.3	
1981-02-05	53.0	
1981-02-03	52.5	
1981-01-31	51.8	
1981-01-29	49.9	
1981-01-27	48.4	
1981-01-25	46.5	
1981-01-23	45.4	
1981-01-21	44.4	
1981-01-19	44.2	
1981-01-17	42.6	
1981-01-13	42.1	
1981-01-11	41.6	
1981-01-09	39.6	
1981-01-07	37.3	
1981-01-05	35.9	
1981-01-02	36.0	
1980-12-31	36.5	
1980-12-29	37.1	
1980-12-22	37.1	
1980-12-15	37.1	
1980-12-11	37.4	
1980-12-07	37.7	
1980-12-02	37.9	
1980-11-28	38.4	
1980-11-20	38.6	
1980-11-18	39.1	
1980-09-25	53.3	
1980-09-23	54.0	
1980-09-21	55.5	
1980-09-19	56.5	
1980-09-16	58.4	
1980-09-14	60.3	
1980-09-12	63.0	
1980-09-10	67.6	
1980-09-08	69.7	
1980-09-06	71.7	
1980-09-03	71.5	
1980-08-30	71.1	
1980-08-28	71.3	
1980-08-26	72.5	
1980-08-24	74.7	
1980-08-22	76.5	
1980-08-20	77.5	

Ground-water levels, continued.

Date	Feet below Surface	Feet to Sealevel
1980-08-18	77.6	
1980-08-16	79.6	
1980-08-14	78.6	
1980-08-12	78.4	
1980-08-10	79.1	
1980-08-08	79.5	
1980-08-05	79.7	
1980-08-03	78.5	
1980-08-01	75.5	
1980-07-30	73.3	
1980-07-28	70.3	
1980-07-26	69.0	
1980-07-24	68.6	
1980-07-22	66.6	
1980-07-20	64.9	
1980-07-18	63.3	
1980-07-16	61.7	
1980-07-14	59.7	
1980-07-12	60.0	
1980-07-10	62.0	
1980-07-07	62.6	
1980-07-05	63.7	
1980-07-03	63.3	
1980-07-01	62.8	
1980-06-29	64.0	
1980-06-27	64.6	
1980-06-25	64.0	
1980-06-22	62.5	
1980-06-20	60.0	
1980-06-18	55.2	
1980-06-16	52.9	
1980-06-14	52.2	
1980-06-12	52.8	
1980-06-10	53.0	
1980-06-08	54.0	
1980-06-04	54.6	
1980-06-02	56.0	
1980-05-31	56.9	
1980-05-28	56.7	
1980-05-26	57.0	
1980-05-21	56.1	
1980-05-18	62.6	
1980-05-16	62.8	
1980-05-14	62.5	
1980-05-11	62.6	
1980-05-08	62.4	
1980-05-06	61.4	
1980-05-04	60.5	
1980-05-02	60.3	
1980-04-30	62.4	
1980-04-26	62.4	
1980-04-24	63.2	
1980-04-22	64.2	
1980-04-20	63.6	
1980-04-18	61.5	

Date	Feet below Surface	Feet to Sealevel
1980-08-17	78.5	
1980-08-15	79.5	
1980-08-13	78.3	
1980-08-11	78.1	
1980-08-09	79.3	
1980-08-06	79.6	
1980-08-04	79.1	
1980-08-02	77.0	
1980-07-31	74.0	
1980-07-29	71.8	
1980-07-27	69.6	
1980-07-25	68.6	
1980-07-23	68.3	
1980-07-21	65.2	
1980-07-19	64.2	
1980-07-17	62.2	
1980-07-15	60.0	
1980-07-13	59.8	
1980-07-11	60.2	
1980-07-09	62.5	
1980-07-06	63.0	
1980-07-04	63.7	
1980-07-02	62.9	
1980-06-30	63.4	
1980-06-28	64.3	
1980-06-26	64.8	
1980-06-23	63.9	
1980-06-21	61.4	
1980-06-19	57.7	
1980-06-17	53.8	
1980-06-15	52.2	
1980-06-13	52.6	
1980-06-11	52.9	
1980-06-09	53.3	
1980-06-05	54.1	
1980-06-03	55.2	
1980-06-01	56.5	
1980-05-29	57.0	
1980-05-27	56.2	
1980-05-22	57.0	
1980-05-19	56.2	
1980-05-17	63.2	
1980-05-15	62.7	
1980-05-12	62.4	
1980-05-09	62.7	
1980-05-07	61.7	
1980-05-05	60.8	
1980-05-03	60.0	
1980-05-01	61.6	
1980-04-27	62.4	
1980-04-25	62.5	
1980-04-23	63.7	
1980-04-21	64.4	
1980-04-19	62.7	
1980-04-17	59.5	

Ground-water levels, continued.

Date	Feet below Surface	Feet to Sealevel
1980-04-16	57.8	
1980-04-14	56.2	
1980-04-12	53.7	
1980-04-10	53.9	
1980-04-08	54.1	
1980-04-06	54.3	
1980-04-04	53.3	
1980-04-02	51.4	
1980-03-31	52.1	
1980-03-29	51.7	
1980-03-27	51.3	
1980-03-25	48.7	
1980-01-17	38.4	
1980-01-15	38.7	
1980-01-10	39.0	
1980-01-08	39.0	
1980-01-06	39.4	
1979-12-29	40.4	
1979-12-25	40.9	
1979-12-18	41.0	
1979-12-15	40.5	
1979-12-11	40.2	
1979-12-07	39.7	
1979-12-03	39.5	
1979-11-29	39.7	
1979-11-25	40.7	
1979-11-21	41.1	
1979-11-16	40.8	
1979-11-14	40.5	
1979-11-12	41.7	
1979-11-10	42.2	
1979-11-07	42.5	
1979-11-05	42.8	
1979-11-03	43.1	
1979-11-01	43.5	
1979-10-30	44.3	
1979-10-28	45.2	
1979-10-26	45.7	
1979-10-24	45.6	
1979-10-22	46.3	
1979-10-20	47.2	
1979-10-18	47.9	
1979-10-16	49.0	
1979-10-14	49.6	
1979-10-12	50.9	
1979-10-10	52.2	
1979-10-08	52.7	
1979-10-06	52.8	
1979-10-04	53.9	
1979-10-02	55.5	
1979-09-30	57.8	
1979-09-28	58.5	
1979-09-26	58.5	
1979-09-23	58.9	
1979-09-21	59.4	

Date	Feet below Surface	Feet to Sealevel
1980-04-15	56.6	
1980-04-13	54.0	
1980-04-11	53.8	
1980-04-09	54.0	
1980-04-07	54.2	
1980-04-05	54.4	
1980-04-03	52.3	
1980-04-01	51.4	
1980-03-30	52.0	
1980-03-28	51.8	
1980-03-26	49.8	
1980-01-22	34.7	
1980-01-16	38.5	
1980-01-14	38.9	
1980-01-09	38.7	
1980-01-07	39.2	
1979-12-30	39.7	
1979-12-26	40.7	
1979-12-24	41.0	
1979-12-17	40.7	
1979-12-12	40.5	
1979-12-08	39.9	
1979-12-06	39.4	
1979-12-02	39.7	
1979-11-28	40.4	
1979-11-24	41.0	
1979-11-17	41.0	
1979-11-15	40.7	
1979-11-13	40.3	
1979-11-11	41.8	
1979-11-08	42.4	
1979-11-06	42.7	
1979-11-04	43.0	
1979-11-02	43.1	
1979-10-31	44.0	
1979-10-29	44.6	
1979-10-27	45.5	
1979-10-25	45.6	
1979-10-23	46.0	
1979-10-21	46.7	
1979-10-19	47.5	
1979-10-17	48.5	
1979-10-15	49.4	
1979-10-13	50.1	
1979-10-11	51.5	
1979-10-09	52.5	
1979-10-07	52.8	
1979-10-05	53.6	
1979-10-03	54.5	
1979-10-01	56.7	
1979-09-29	58.3	
1979-09-27	58.6	
1979-09-24	58.5	
1979-09-22	59.2	
1979-09-20	59.6	

Ground-water levels, continued.

Date	Feet below Surface	Feet to Sealevel
1979-09-19	59.8	
1979-09-17	60.0	
1979-09-15	61.1	
1979-09-13	62.8	
1979-09-11	64.5	
1979-09-09	67.1	
1979-09-07	68.0	
1979-09-05	70.3	
1979-09-03	73.3	
1979-09-01	76.6	
1979-08-30	79.5	
1979-08-28	80.5	
1979-08-26	83.3	
1979-08-24	83.5	
1979-08-22	83.4	
1979-08-20	83.3	
1979-08-18	85.0	
1979-08-16	86.5	
1979-08-14	88.2	
1979-08-12	88.7	
1979-08-10	89.3	
1979-08-08	89.0	
1979-08-06	89.0	
1979-08-04	87.3	
1979-08-02	85.3	
1979-07-31	85.5	
1979-07-29	84.5	
1979-07-27	83.8	
1979-07-25	82.1	
1979-07-23	81.3	
1979-07-21	79.1	
1979-07-19	78.2	
1979-07-17	77.2	
1979-07-15	77.8	
1979-07-13	78.1	
1979-07-11	79.0	
1979-07-09	79.0	
1979-07-07	77.8	
1979-07-05	76.0	
1979-07-03	74.8	
1979-07-01	74.4	
1979-06-29	75.0	
1979-06-27	75.5	
1979-06-25	75.6	
1979-06-23	75.8	
1979-06-21	74.8	
1979-06-19	74.8	
1979-06-17	73.5	
1979-06-15	69.8	
1979-06-13	67.4	
1979-06-11	66.6	
1979-06-09	64.8	
1979-06-07	64.4	
1979-06-05	63.7	
1979-06-03	62.0	

Date	Feet below Surface	Feet to Sealevel
1979-09-18	60.0	
1979-09-16	60.3	
1979-09-14	61.9	
1979-09-12	63.5	
1979-09-10	66.1	
1979-09-08	67.6	
1979-09-06	68.9	
1979-09-04	72.0	
1979-09-02	75.3	
1979-08-31	78.0	
1979-08-29	80.0	
1979-08-27	82.0	
1979-08-25	83.3	
1979-08-23	83.5	
1979-08-21	83.3	
1979-08-19	83.9	
1979-08-17	85.3	
1979-08-15	87.4	
1979-08-13	88.5	
1979-08-11	89.1	
1979-08-09	89.0	
1979-08-07	89.3	
1979-08-05	88.4	
1979-08-03	86.0	
1979-08-01	85.3	
1979-07-30	85.3	
1979-07-28	84.3	
1979-07-26	82.6	
1979-07-24	81.3	
1979-07-22	80.1	
1979-07-20	78.3	
1979-07-18	77.6	
1979-07-16	78.0	
1979-07-14	77.8	
1979-07-12	78.7	
1979-07-10	79.5	
1979-07-08	78.0	
1979-07-06	77.4	
1979-07-04	75.1	
1979-07-02	74.7	
1979-06-30	74.7	
1979-06-28	75.4	
1979-06-26	75.6	
1979-06-24	75.7	
1979-06-22	75.5	
1979-06-20	74.8	
1979-06-18	74.0	
1979-06-16	71.8	
1979-06-14	68.8	
1979-06-12	66.8	
1979-06-10	65.9	
1979-06-08	64.2	
1979-06-06	64.5	
1979-06-04	62.0	
1979-06-02	61.8	

Ground-water levels, continued.

Date	Feet below Surface	Feet to Sealevel
1979-06-01	61.6	
1979-05-30	59.9	
1979-05-28	58.4	
1979-05-26	56.6	
1979-05-24	55.9	
1979-05-22	51.9	
1979-05-20	49.8	
1979-05-18	49.6	
1979-05-16	49.8	
1979-05-14	50.2	
1979-05-12	53.2	
1979-05-10	54.2	
1979-05-08	54.9	
1979-05-06	55.6	
1979-05-04	56.2	
1979-05-02	57.1	
1979-04-29	56.5	
1979-04-27	54.6	
1979-04-24	53.4	
1979-04-22	53.6	
1979-04-20	52.4	
1979-04-18	50.8	
1979-04-16	48.6	
1979-04-14	47.5	
1979-04-12	46.5	
1979-04-10	44.2	
1979-04-08	39.9	
1979-04-06	37.9	
1979-04-04	37.8	
1979-04-02	38.6	
1979-03-31	39.4	
1979-03-29	40.4	
1979-03-27	40.9	
1979-03-24	41.3	
1979-03-19	41.4	
1979-03-17	39.8	
1979-03-15	37.8	
1979-03-13	37.4	
1979-03-06	36.8	
1979-03-04	37.2	
1979-03-02	38.1	
1979-02-27	38.6	
1979-02-24	38.7	
1979-02-22	37.8	
1979-02-20	36.0	
1979-02-18	35.1	
1979-02-14	34.8	
1979-02-09	35.5	
1979-02-05	35.7	
1979-02-02	35.9	
1979-01-31	36.2	
1979-01-29	36.5	
1979-01-27	36.7	
1979-01-21	36.9	
1979-01-18	37.1	

Date	Feet below Surface	Feet to Sealevel
1979-05-31	60.8	
1979-05-29	59.1	
1979-05-27	57.5	
1979-05-25	56.4	
1979-05-23	54.0	
1979-05-21	50.0	
1979-05-19	49.8	
1979-05-17	49.7	
1979-05-15	49.6	
1979-05-13	51.9	
1979-05-11	53.5	
1979-05-09	54.6	
1979-05-07	54.9	
1979-05-05	55.9	
1979-05-03	56.5	
1979-04-30	57.2	
1979-04-28	55.3	
1979-04-26	53.5	
1979-04-23	53.5	
1979-04-21	53.4	
1979-04-19	51.9	
1979-04-17	49.4	
1979-04-15	48.0	
1979-04-13	47.4	
1979-04-11	45.3	
1979-04-09	42.2	
1979-04-07	38.5	
1979-04-05	37.7	
1979-04-03	38.3	
1979-04-01	39.0	
1979-03-30	40.0	
1979-03-28	40.7	
1979-03-26	41.2	
1979-03-23	41.4	
1979-03-18	40.8	
1979-03-16	38.3	
1979-03-14	37.5	
1979-03-07	36.7	
1979-03-05	37.0	
1979-03-03	37.6	
1979-03-01	38.6	
1979-02-25	38.8	
1979-02-23	38.1	
1979-02-21	37.7	
1979-02-19	35.9	
1979-02-17	34.8	
1979-02-11	35.6	
1979-02-06	35.6	
1979-02-03	35.8	
1979-02-01	36.0	
1979-01-30	36.3	
1979-01-28	36.6	
1979-01-24	36.8	
1979-01-20	37.0	
1979-01-17	37.4	

Ground-water levels, continued.

Date	Feet below Surface	Feet to Sealevel
1979-01-16	37.6	
1979-01-14	37.9	
1979-01-10	37.9	
1979-01-01	41.2	
1978-12-25	41.1	
1978-12-10	41.4	
1978-11-27	42.6	
1978-11-20	43.1	
1978-11-18	44.1	
1978-11-16	44.7	
1978-11-10	45.0	
1978-11-01	45.2	
1978-10-25	45.3	
1978-10-17	45.5	
1978-10-15	46.9	
1978-10-13	47.6	
1978-10-11	49.2	
1978-10-09	51.0	
1978-10-07	52.9	
1978-10-04	53.3	
1978-09-30	53.1	
1978-09-28	53.7	
1978-09-26	54.2	
1978-09-24	55.1	
1978-09-22	56.0	
1978-09-20	57.2	
1978-09-18	59.2	
1978-09-16	61.3	
1978-09-14	64.2	
1978-09-12	68.2	
1978-09-10	74.2	
1978-09-08	79.5	
1978-09-06	83.8	
1978-09-04	86.0	
1978-09-02	86.2	
1978-08-31	85.0	
1978-08-29	82.7	
1978-08-27	84.2	
1978-08-25	83.9	
1978-08-23	88.7	
1978-08-21	90.5	
1978-08-19	92.9	
1978-08-17	92.3	
1978-08-15	91.0	
1978-08-13	90.3	
1978-08-11	88.1	
1978-08-09	86.3	
1978-08-07	87.1	
1978-08-05	88.5	
1978-08-02	88.7	
1978-07-31	88.8	
1978-07-29	88.8	
1978-07-27	88.6	
1978-07-25	87.6	
1978-07-23	86.8	

Date	Feet below Surface	Feet to Sealevel
1979-01-15	37.7	
1979-01-11	38.0	
1979-01-06	40.8	
1978-12-30	41.2	
1978-12-20	41.3	
1978-11-30	42.1	
1978-11-25	43.0	
1978-11-19	43.6	
1978-11-17	44.5	
1978-11-15	44.9	
1978-11-05	45.1	
1978-10-30	45.1	
1978-10-20	45.4	
1978-10-16	46.6	
1978-10-14	47.1	
1978-10-12	48.3	
1978-10-10	50.0	
1978-10-08	51.9	
1978-10-06	53.2	
1978-10-01	53.2	
1978-09-29	53.2	
1978-09-27	54.0	
1978-09-25	54.5	
1978-09-23	55.6	
1978-09-21	56.4	
1978-09-19	58.2	
1978-09-17	60.1	
1978-09-15	62.5	
1978-09-13	65.7	
1978-09-11	70.9	
1978-09-09	76.8	
1978-09-07	82.2	
1978-09-05	85.5	
1978-09-03	86.5	
1978-09-01	85.4	
1978-08-30	84.3	
1978-08-28	82.6	
1978-08-26	85.4	
1978-08-24	87.9	
1978-08-22	89.8	
1978-08-20	90.8	
1978-08-18	93.0	
1978-08-16	91.5	
1978-08-14	90.6	
1978-08-12	89.4	
1978-08-10	86.7	
1978-08-08	86.4	
1978-08-06	88.1	
1978-08-03	88.6	
1978-08-01	88.9	
1978-07-30	88.9	
1978-07-28	88.7	
1978-07-26	88.3	
1978-07-24	86.6	
1978-07-22	86.7	

Ground-water levels, continued.

Date	Feet below Surface	Feet to Sealevel
1978-07-21	86.1	
1978-07-19	85.7	
1978-07-17	86.1	
1978-07-15	84.3	
1978-07-13	81.1	
1978-07-11	78.8	
1978-07-09	78.8	
1978-07-07	77.9	
1978-07-05	76.2	
1978-07-03	73.2	
1978-07-01	71.4	
1978-06-29	70.6	
1978-06-27	69.6	
1978-06-25	66.9	
1978-06-23	65.6	
1978-06-20	65.6	
1978-06-18	62.9	
1978-06-16	61.5	
1978-06-14	58.8	
1978-06-12	56.9	
1978-06-10	55.1	
1978-06-08	51.8	
1978-06-06	50.4	
1978-06-04	51.6	
1978-06-02	50.5	
1978-05-31	50.4	
1978-05-29	49.6	
1978-05-27	49.9	
1978-05-25	49.6	
1978-05-23	47.7	
1978-05-21	46.4	
1978-05-19	45.8	
1978-05-17	45.1	
1978-05-15	43.6	
1978-05-13	41.6	
1978-05-11	40.8	
1978-05-09	40.0	
1978-05-06	40.0	
1978-05-02	40.2	
1978-04-30	40.9	
1978-04-25	41.1	
1978-01-26	48.2	
1978-01-24	48.8	
1978-01-22	49.0	
1978-01-20	49.2	
1978-01-18	49.5	
1978-01-16	49.9	
1978-01-14	50.5	
1978-01-11	50.9	
1978-01-09	50.9	
1978-01-06	51.2	
1978-01-04	51.8	
1978-01-02	52.7	
1977-12-31	53.7	
1977-12-29	54.2	

Date	Feet below Surface	Feet to Sealevel
1978-07-20	85.6	
1978-07-18	85.9	
1978-07-16	85.7	
1978-07-14	82.5	
1978-07-12	79.6	
1978-07-10	78.7	
1978-07-08	78.6	
1978-07-06	77.0	
1978-07-04	74.8	
1978-07-02	72.2	
1978-06-30	71.0	
1978-06-28	70.3	
1978-06-26	68.4	
1978-06-24	65.8	
1978-06-21	65.7	
1978-06-19	63.5	
1978-06-17	62.7	
1978-06-15	60.3	
1978-06-13	57.8	
1978-06-11	56.8	
1978-06-09	52.5	
1978-06-07	50.8	
1978-06-05	50.2	
1978-06-03	50.9	
1978-06-01	49.8	
1978-05-30	49.9	
1978-05-28	50.1	
1978-05-26	49.7	
1978-05-24	48.5	
1978-05-22	47.0	
1978-05-20	45.9	
1978-05-18	45.7	
1978-05-16	44.5	
1978-05-14	42.5	
1978-05-12	41.3	
1978-05-10	40.3	
1978-05-08	39.9	
1978-05-04	40.1	
1978-05-01	40.8	
1978-04-28	41.0	
1978-01-27	45.3	
1978-01-25	48.6	
1978-01-23	48.9	
1978-01-21	49.1	
1978-01-19	49.3	
1978-01-17	49.7	
1978-01-15	50.1	
1978-01-12	50.7	
1978-01-10	50.8	
1978-01-08	51.0	
1978-01-05	51.4	
1978-01-03	52.3	
1978-01-01	53.3	
1977-12-30	53.9	
1977-12-28	54.5	

Ground-water levels, continued.

Date	Feet below Surface	Feet to Sealevel
1977-12-27	54.8	
1977-12-25	55.3	
1977-12-23	56.0	
1977-12-21	56.7	
1977-12-19	60.4	
1977-12-17	63.7	
1977-12-15	68.0	
1977-12-13	71.6	
1977-12-11	72.0	
1977-12-09	71.8	
1977-12-06	71.9	
1977-12-04	72.4	
1977-11-30	72.7	
1977-11-28	71.5	
1977-11-26	71.3	
1977-11-24	71.5	
1977-11-17	71.5	
1977-11-15	71.3	
1977-11-13	70.3	
1977-11-11	69.1	
1977-11-09	68.5	
1977-11-06	68.3	
1977-11-04	67.5	
1977-11-02	66.4	
1977-10-31	65.3	
1977-10-29	63.8	
1977-10-27	63.5	
1977-10-25	63.8	
1977-10-23	64.4	
1977-10-21	65.0	
1977-10-19	65.3	
1977-10-17	65.3	
1977-10-15	65.1	
1977-10-13	64.9	
1977-10-11	65.2	
1977-10-09	65.6	
1977-10-07	66.5	
1977-10-05	67.1	
1977-10-03	67.9	
1977-10-01	68.8	
1977-09-29	69.5	
1977-09-27	70.3	
1977-09-25	71.7	
1977-09-23	75.3	
1977-09-21	77.0	
1977-09-19	78.0	
1977-09-17	78.7	
1977-09-15	79.8	
1977-09-13	82.5	
1977-09-11	86.0	
1977-09-09	88.4	
1977-09-07	89.9	
1977-09-05	92.5	
1977-09-03	97.6	
1977-09-01	100.1	

Date	Feet below Surface	Feet to Sealevel
1977-12-26	55.0	
1977-12-24	55.7	
1977-12-22	56.4	
1977-12-20	59.0	
1977-12-18	61.7	
1977-12-16	65.6	
1977-12-14	70.7	
1977-12-12	71.9	
1977-12-10	71.7	
1977-12-07	71.7	
1977-12-05	72.1	
1977-12-03	72.5	
1977-11-29	71.6	
1977-11-27	71.4	
1977-11-25	71.4	
1977-11-20	71.6	
1977-11-16	71.4	
1977-11-14	71.0	
1977-11-12	70.0	
1977-11-10	68.6	
1977-11-08	68.4	
1977-11-05	68.1	
1977-11-03	67.1	
1977-11-01	66.0	
1977-10-30	64.4	
1977-10-28	63.6	
1977-10-26	63.6	
1977-10-24	64.2	
1977-10-22	64.6	
1977-10-20	65.2	
1977-10-18	65.4	
1977-10-16	65.2	
1977-10-14	65.0	
1977-10-12	65.0	
1977-10-10	65.4	
1977-10-08	66.2	
1977-10-06	66.7	
1977-10-04	67.4	
1977-10-02	68.3	
1977-09-30	69.3	
1977-09-28	69.7	
1977-09-26	71.0	
1977-09-24	74.0	
1977-09-22	76.2	
1977-09-20	77.5	
1977-09-18	78.3	
1977-09-16	79.1	
1977-09-14	81.3	
1977-09-12	84.3	
1977-09-10	87.7	
1977-09-08	89.1	
1977-09-06	91.0	
1977-09-04	95.0	
1977-09-02	99.0	
1977-07-29	98.0	

Ground-water levels, continued.

Date	Feet below Surface	Feet to Sealevel
1977-07-28	97.8	
1977-07-26	96.7	
1977-07-24	94.6	
1977-07-22	93.7	
1977-07-20	93.0	
1977-07-18	92.3	
1977-07-16	91.3	
1977-07-14	90.0	
1977-07-12	88.1	
1977-07-10	84.8	
1977-07-08	83.7	
1977-07-06	84.0	
1977-07-04	88.6	
1977-07-02	90.4	
1977-06-30	91.7	
1977-06-27	92.0	
1977-06-25	91.6	
1977-06-23	90.2	
1977-06-21	88.7	
1977-06-19	86.5	
1977-06-17	83.8	
1977-06-15	82.0	
1977-06-13	80.3	
1977-06-11	78.7	
1977-06-09	76.7	
1977-06-07	72.3	
1977-06-05	69.2	
1977-06-03	67.7	
1977-06-01	67.0	
1977-05-30	66.3	
1977-05-28	65.5	
1977-05-20	65.3	
1977-05-18	66.5	
1977-05-16	69.0	
1977-05-14	72.4	
1977-05-12	76.5	
1977-05-10	78.1	
1977-05-08	79.6	
1977-05-06	79.6	
1977-05-04	78.5	
1977-04-30	77.6	
1977-04-28	76.7	
1977-04-26	77.2	
1977-04-24	76.0	
1977-04-22	73.6	
1977-04-20	71.9	
1977-04-18	73.2	
1977-04-16	74.5	
1977-04-14	75.3	
1977-04-12	76.4	
1977-04-10	77.3	
1977-04-08	76.5	
1977-04-06	76.0	
1977-04-04	75.2	
1977-04-02	75.0	

Date	Feet below Surface	Feet to Sealevel
1977-07-27	97.0	
1977-07-25	95.7	
1977-07-23	94.1	
1977-07-21	93.2	
1977-07-19	93.1	
1977-07-17	92.0	
1977-07-15	90.8	
1977-07-13	88.7	
1977-07-11	86.2	
1977-07-09	83.9	
1977-07-07	83.4	
1977-07-05	85.0	
1977-07-03	89.5	
1977-07-01	91.2	
1977-06-28	91.9	
1977-06-26	91.9	
1977-06-24	90.8	
1977-06-22	89.3	
1977-06-20	87.6	
1977-06-18	85.0	
1977-06-16	82.9	
1977-06-14	80.4	
1977-06-12	79.3	
1977-06-10	78.3	
1977-06-08	74.5	
1977-06-06	70.3	
1977-06-04	68.5	
1977-06-02	67.2	
1977-05-31	66.7	
1977-05-29	65.8	
1977-05-27	65.4	
1977-05-19	65.9	
1977-05-17	67.7	
1977-05-15	70.5	
1977-05-13	74.7	
1977-05-11	77.3	
1977-05-09	78.7	
1977-05-07	80.1	
1977-05-05	78.8	
1977-05-01	78.4	
1977-04-29	77.1	
1977-04-27	76.8	
1977-04-25	76.7	
1977-04-23	75.1	
1977-04-21	72.3	
1977-04-19	72.7	
1977-04-17	74.0	
1977-04-15	74.7	
1977-04-13	75.7	
1977-04-11	76.8	
1977-04-09	77.0	
1977-04-07	76.4	
1977-04-05	75.3	
1977-04-03	75.1	
1977-03-31	75.1	

Ground-water levels, continued.

Date	Feet below Surface	Feet to Sealevel
1977-03-30	75.2	
1977-03-28	73.7	
1977-03-26	74.5	
1977-03-24	74.7	
1977-03-22	76.7	
1977-03-20	81.6	
1977-03-18	84.5	
1977-03-16	84.8	
1977-03-14	85.7	
1977-03-12	86.2	
1977-03-10	86.0	
1977-03-08	84.7	
1977-03-06	83.5	
1977-03-04	82.8	
1977-03-02	81.7	
1977-02-28	80.1	
1977-02-26	78.9	
1977-02-24	77.8	
1977-02-22	75.9	
1977-02-20	73.7	
1977-02-18	69.6	
1977-02-16	64.8	
1977-02-14	61.9	
1977-02-12	57.9	
1977-02-10	55.7	
1977-02-08	52.6	
1977-02-06	50.0	
1977-02-04	47.0	
1977-02-02	45.9	
1977-01-31	44.9	
1977-01-29	44.2	
1977-01-27	43.8	
1977-01-25	43.6	
1977-01-23	43.4	
1977-01-21	43.2	
1977-01-19	43.3	
1977-01-11	43.3	
1976-12-31	45.7	
1976-12-25	45.4	
1976-12-18	45.7	
1976-12-12	46.0	
1976-12-01	46.3	
1976-11-29	46.6	
1976-11-27	47.1	
1976-11-25	47.4	
1976-11-23	47.7	
1976-11-21	48.0	
1976-11-19	48.3	
1976-11-17	48.7	
1976-11-15	49.0	
1976-11-13	48.8	
1976-11-10	48.6	
1976-11-04	48.6	
1976-11-02	48.8	
1976-10-31	49.0	

Date	Feet below Surface	Feet to Sealevel
1977-03-29	75.1	
1977-03-27	74.3	
1977-03-25	74.6	
1977-03-23	74.9	
1977-03-21	79.3	
1977-03-19	83.1	
1977-03-17	84.7	
1977-03-15	84.9	
1977-03-13	86.3	
1977-03-11	86.1	
1977-03-09	85.4	
1977-03-07	83.7	
1977-03-05	83.4	
1977-03-03	82.1	
1977-03-01	80.7	
1977-02-27	79.7	
1977-02-25	78.0	
1977-02-23	77.4	
1977-02-21	74.5	
1977-02-19	71.9	
1977-02-17	67.3	
1977-02-15	62.8	
1977-02-13	60.0	
1977-02-11	56.7	
1977-02-09	54.4	
1977-02-07	51.7	
1977-02-05	48.7	
1977-02-03	46.5	
1977-02-01	45.7	
1977-01-30	44.5	
1977-01-28	43.9	
1977-01-26	43.7	
1977-01-24	43.5	
1977-01-22	43.3	
1977-01-20	43.1	
1977-01-12	43.4	
1977-01-01	45.7	
1976-12-29	45.5	
1976-12-20	45.5	
1976-12-15	45.9	
1976-12-10	46.2	
1976-11-30	46.4	
1976-11-28	46.9	
1976-11-26	47.3	
1976-11-24	47.5	
1976-11-22	47.9	
1976-11-20	48.1	
1976-11-18	48.5	
1976-11-16	48.9	
1976-11-14	48.9	
1976-11-11	48.7	
1976-11-05	48.5	
1976-11-03	48.7	
1976-11-01	48.9	
1976-10-30	49.1	

Ground-water levels, continued.

Date	Feet below Surface	Feet to Sealevel
1976-10-29	49.2	
1976-10-27	49.4	
1976-10-25	49.6	
1976-10-23	49.9	
1976-10-21	50.4	
1976-10-19	51.0	
1976-10-17	51.4	
1976-10-15	52.3	
1976-10-13	53.3	
1976-10-11	54.7	
1976-10-09	56.7	
1976-10-07	58.6	
1976-10-05	60.0	
1976-10-03	63.3	
1976-10-01	66.2	
1976-09-29	68.6	
1976-09-27	69.3	
1976-09-25	69.9	
1976-09-23	72.0	
1976-09-21	72.0	
1976-09-19	73.1	
1976-09-17	75.2	
1976-09-15	78.6	
1976-09-13	83.5	
1976-09-11	86.3	
1976-09-09	86.6	
1976-09-07	88.7	
1976-09-05	88.9	
1976-09-03	87.4	
1976-09-01	87.9	
1976-08-30	88.0	
1976-08-28	87.9	
1976-08-26	87.3	
1976-08-23	87.3	
1976-08-21	90.8	
1976-08-19	93.3	
1976-08-17	93.9	
1976-08-15	93.7	
1976-08-13	92.9	
1976-08-11	94.2	
1976-08-09	95.1	
1976-08-07	95.3	
1976-08-05	95.6	
1976-08-03	96.1	
1976-08-01	95.8	
1976-07-30	95.4	
1976-07-28	95.4	
1976-07-25	95.6	
1976-07-23	95.6	
1976-07-21	95.2	
1976-07-19	94.2	
1976-07-17	93.1	
1976-07-15	91.3	
1976-07-13	90.4	
1976-07-11	90.4	

Date	Feet below Surface	Feet to Sealevel
1976-10-28	49.3	
1976-10-26	49.5	
1976-10-24	49.7	
1976-10-22	50.1	
1976-10-20	50.5	
1976-10-18	51.2	
1976-10-16	51.9	
1976-10-14	52.7	
1976-10-12	54.1	
1976-10-10	55.0	
1976-10-08	57.6	
1976-10-06	59.4	
1976-10-04	61.9	
1976-10-02	64.8	
1976-09-30	67.2	
1976-09-28	69.2	
1976-09-26	69.4	
1976-09-24	71.3	
1976-09-22	72.1	
1976-09-20	72.2	
1976-09-18	74.1	
1976-09-16	76.7	
1976-09-14	80.9	
1976-09-12	85.9	
1976-09-10	86.4	
1976-09-08	87.3	
1976-09-06	89.1	
1976-09-04	88.3	
1976-09-02	87.6	
1976-08-31	87.9	
1976-08-29	88.2	
1976-08-27	87.5	
1976-08-25	87.2	
1976-08-22	89.7	
1976-08-20	92.3	
1976-08-18	93.8	
1976-08-16	94.0	
1976-08-14	93.3	
1976-08-12	93.2	
1976-08-10	94.7	
1976-08-08	95.2	
1976-08-06	95.4	
1976-08-04	95.8	
1976-08-02	96.2	
1976-07-31	95.5	
1976-07-29	95.3	
1976-07-26	95.5	
1976-07-24	95.7	
1976-07-22	95.4	
1976-07-20	94.8	
1976-07-18	93.6	
1976-07-16	92.3	
1976-07-14	90.7	
1976-07-12	90.3	
1976-07-10	90.2	

Ground-water levels, continued.

Date	Feet below Surface	Feet to Sealevel
1976-07-09	90.0	
1976-07-07	89.2	
1976-07-05	86.5	
1976-07-03	85.2	
1976-07-01	83.7	
1976-06-29	83.7	
1976-06-27	84.1	
1976-06-25	83.5	
1976-06-23	83.5	
1976-06-21	84.7	
1976-06-19	84.7	
1976-06-17	83.7	
1976-06-15	83.0	
1976-06-13	81.5	
1976-06-11	78.6	
1976-06-09	75.9	
1976-06-07	75.4	
1976-06-05	73.8	
1976-06-03	71.7	
1976-06-01	71.3	
1976-05-30	71.6	
1976-05-28	71.8	
1976-05-26	72.5	
1976-05-24	75.7	
1976-05-22	79.3	
1976-05-20	79.8	
1976-05-18	78.7	
1976-05-16	77.3	
1976-05-14	74.9	
1976-05-12	72.5	
1976-05-10	69.7	
1976-05-08	69.2	
1976-05-06	69.2	
1976-05-04	67.8	
1976-05-02	65.7	
1976-04-30	63.7	
1976-04-28	62.3	
1976-04-26	60.4	
1976-04-24	59.4	
1976-04-22	57.8	
1976-04-20	57.5	
1976-04-18	57.5	
1976-04-16	58.0	
1976-04-14	61.7	
1976-04-12	64.3	
1976-04-10	67.2	
1976-04-08	69.7	
1976-04-06	70.8	
1976-04-04	75.0	
1976-04-02	76.6	
1976-03-31	77.2	
1976-03-29	76.9	
1976-03-27	76.2	
1976-03-25	74.3	
1976-03-23	71.0	

Date	Feet below Surface	Feet to Sealevel
1976-07-08	89.7	
1976-07-06	87.2	
1976-07-04	86.2	
1976-07-02	84.4	
1976-06-30	83.6	
1976-06-28	83.8	
1976-06-26	83.9	
1976-06-24	83.2	
1976-06-22	84.1	
1976-06-20	84.8	
1976-06-18	84.0	
1976-06-16	83.6	
1976-06-14	82.7	
1976-06-12	80.4	
1976-06-10	77.0	
1976-06-08	75.6	
1976-06-06	75.2	
1976-06-04	72.3	
1976-06-02	71.2	
1976-05-31	71.5	
1976-05-29	71.7	
1976-05-27	72.2	
1976-05-25	74.4	
1976-05-23	77.7	
1976-05-21	79.9	
1976-05-19	79.5	
1976-05-17	77.8	
1976-05-15	76.7	
1976-05-13	73.7	
1976-05-11	70.7	
1976-05-09	69.4	
1976-05-07	69.1	
1976-05-05	68.5	
1976-05-03	66.7	
1976-05-01	64.4	
1976-04-29	63.4	
1976-04-27	61.0	
1976-04-25	60.1	
1976-04-23	58.7	
1976-04-21	57.4	
1976-04-19	57.6	
1976-04-17	57.6	
1976-04-15	59.2	
1976-04-13	62.8	
1976-04-11	65.7	
1976-04-09	68.4	
1976-04-07	70.1	
1976-04-05	72.1	
1976-04-03	75.7	
1976-04-01	77.1	
1976-03-30	77.1	
1976-03-28	76.5	
1976-03-26	75.0	
1976-03-24	72.3	
1976-03-22	70.2	

Ground-water levels, continued.

Date	Feet below Surface	Feet to Sealevel
1976-03-21	66.5	
1976-03-19	61.4	
1976-03-17	58.1	
1976-03-15	57.0	
1976-03-13	57.0	
1976-03-10	56.5	
1976-03-08	56.3	
1976-03-06	58.2	
1976-03-04	60.2	
1976-03-02	61.2	
1976-02-29	63.0	
1976-02-27	65.2	
1976-02-25	67.5	
1976-02-23	68.7	
1976-02-20	68.9	
1976-02-18	69.2	
1976-02-16	69.9	
1976-02-14	70.2	
1976-02-12	70.4	
1976-02-10	70.4	
1976-02-08	70.0	
1976-02-06	70.2	
1976-02-04	69.6	
1976-02-02	67.9	
1976-01-31	64.9	
1976-01-29	61.5	
1976-01-27	59.4	
1976-01-25	57.5	
1976-01-23	55.4	
1976-01-21	54.8	
1976-01-19	54.6	
1976-01-16	54.8	
1976-01-14	54.3	
1976-01-12	54.0	
1976-01-10	53.1	
1976-01-08	52.7	
1976-01-06	51.2	
1976-01-04	48.3	
1976-01-02	47.0	
1975-12-31	44.4	
1975-12-29	44.0	
1975-12-27	43.6	
1975-12-25	43.3	
1975-12-23	42.8	
1975-12-18	42.8	
1975-12-15	43.0	
1975-12-13	43.4	
1975-12-10	43.5	
1975-12-06	43.4	
1975-12-04	43.6	
1975-12-01	43.8	
1975-11-29	44.7	
1975-11-27	45.0	
1975-11-25	45.8	
1975-11-23	46.3	

Date	Feet below Surface	Feet to Sealevel
1976-03-20	64.2	
1976-03-18	58.5	
1976-03-16	57.6	
1976-03-14	57.1	
1976-03-12	56.4	
1976-03-09	56.4	
1976-03-07	56.2	
1976-03-05	59.2	
1976-03-03	60.9	
1976-03-01	62.2	
1976-02-28	64.3	
1976-02-26	66.2	
1976-02-24	68.2	
1976-02-22	68.8	
1976-02-19	69.0	
1976-02-17	69.4	
1976-02-15	70.1	
1976-02-13	70.3	
1976-02-11	70.5	
1976-02-09	70.2	
1976-02-07	70.1	
1976-02-05	70.1	
1976-02-03	69.3	
1976-02-01	66.9	
1976-01-30	62.8	
1976-01-28	60.6	
1976-01-26	58.6	
1976-01-24	56.6	
1976-01-22	55.1	
1976-01-20	54.7	
1976-01-17	54.7	
1976-01-15	54.4	
1976-01-13	54.4	
1976-01-11	53.3	
1976-01-09	53.0	
1976-01-07	52.1	
1976-01-05	49.1	
1976-01-03	47.4	
1976-01-01	44.8	
1975-12-30	44.2	
1975-12-28	43.7	
1975-12-26	43.5	
1975-12-24	43.1	
1975-12-22	42.7	
1975-12-16	42.9	
1975-12-14	43.2	
1975-12-11	43.6	
1975-12-07	43.3	
1975-12-05	43.5	
1975-12-03	43.7	
1975-11-30	44.6	
1975-11-28	44.8	
1975-11-26	45.6	
1975-11-24	46.0	
1975-11-22	47.3	

Ground-water levels, continued.

Date	Feet below Surface	Feet to Sealevel
1975-11-21	47.8	
1975-11-19	49.1	
1975-11-17	50.7	
1975-11-15	51.7	
1975-11-13	52.6	
1975-11-11	54.4	
1975-11-09	54.8	
1975-11-07	55.6	
1975-11-05	56.5	
1975-11-03	57.4	
1975-11-01	57.9	
1975-10-30	58.1	
1975-10-28	58.4	
1975-10-26	60.9	
1975-10-24	64.3	
1975-10-22	66.8	
1975-10-20	68.9	
1975-10-18	71.2	
1975-10-16	72.5	
1975-10-14	72.9	
1975-10-12	72.5	
1975-10-10	72.0	
1975-10-08	72.2	
1975-10-05	72.0	
1975-10-02	72.8	
1975-09-30	74.4	
1975-09-28	76.0	
1975-09-26	76.2	
1975-09-24	78.0	
1975-09-22	81.1	
1975-09-20	83.1	
1975-09-18	83.8	
1975-09-16	85.3	
1975-09-14	86.9	
1975-09-11	86.9	
1975-09-09	86.0	
1975-09-07	84.8	
1975-09-05	84.7	
1975-09-03	85.9	
1975-09-01	86.8	
1975-08-25	86.9	
1975-08-23	88.6	
1975-08-21	91.4	
1975-08-19	93.0	
1975-08-17	93.0	
1975-08-15	91.9	
1975-08-13	91.7	
1975-08-11	90.7	
1975-08-09	89.8	
1975-08-07	88.3	
1975-08-05	84.6	
1975-08-01	84.0	
1975-07-30	84.0	
1975-07-28	83.8	
1975-07-26	84.4	

Date	Feet below Surface	Feet to Sealevel
1975-11-20	48.3	
1975-11-18	49.7	
1975-11-16	51.4	
1975-11-14	51.9	
1975-11-12	52.9	
1975-11-10	54.6	
1975-11-08	54.9	
1975-11-06	56.0	
1975-11-04	56.7	
1975-11-02	57.7	
1975-10-31	58.0	
1975-10-29	58.2	
1975-10-27	59.7	
1975-10-25	62.4	
1975-10-23	65.7	
1975-10-21	67.8	
1975-10-19	70.4	
1975-10-17	71.7	
1975-10-15	72.8	
1975-10-13	72.7	
1975-10-11	72.1	
1975-10-09	72.1	
1975-10-07	72.1	
1975-10-03	71.9	
1975-10-01	73.6	
1975-09-29	75.4	
1975-09-27	76.1	
1975-09-25	76.7	
1975-09-23	79.8	
1975-09-21	82.7	
1975-09-19	83.3	
1975-09-17	84.4	
1975-09-15	86.5	
1975-09-12	86.8	
1975-09-10	87.0	
1975-09-08	85.5	
1975-09-06	84.6	
1975-09-04	84.9	
1975-09-02	86.6	
1975-08-29	86.8	
1975-08-24	87.8	
1975-08-22	90.0	
1975-08-20	92.9	
1975-08-18	93.2	
1975-08-16	92.6	
1975-08-14	91.8	
1975-08-12	91.4	
1975-08-10	90.1	
1975-08-08	89.5	
1975-08-06	86.2	
1975-08-04	84.1	
1975-07-31	84.1	
1975-07-29	83.6	
1975-07-27	84.1	
1975-07-25	84.3	

Ground-water levels, continued.

Date	Feet below Surface	Feet to Sealevel
1975-07-24	84.2	
1975-07-22	84.1	
1975-07-20	84.3	
1975-07-18	83.0	
1975-07-16	82.7	
1975-07-14	81.9	
1975-07-12	81.2	
1975-07-10	80.9	
1975-07-08	80.6	
1975-07-06	79.0	
1975-07-04	78.5	
1975-07-02	79.1	
1975-06-30	79.4	
1975-06-28	79.1	
1975-06-26	79.8	
1975-06-24	81.1	
1975-06-20	81.4	
1975-06-18	81.7	
1975-06-16	80.0	
1975-06-14	79.5	
1975-06-12	77.0	
1975-06-10	74.0	
1975-06-08	73.8	
1975-06-06	73.1	
1975-06-03	72.9	
1975-06-01	71.2	
1975-05-30	70.9	
1975-05-28	72.6	
1975-05-26	73.1	
1975-05-24	72.8	
1975-05-22	73.7	
1975-05-20	74.7	
1975-05-18	74.9	
1975-05-16	73.9	
1975-05-14	72.2	
1975-05-12	72.3	
1975-05-10	73.1	
1975-05-08	72.5	
1975-05-06	72.6	
1975-05-04	71.9	
1975-05-02	68.9	
1975-04-30	66.9	
1975-04-28	65.1	
1975-04-26	63.9	
1975-04-24	63.8	
1975-04-22	65.0	
1975-04-20	66.9	
1975-04-18	69.0	
1975-04-16	70.0	
1975-04-14	70.2	
1975-04-12	70.2	
1975-04-10	69.0	
1975-04-08	67.3	
1975-04-06	65.1	
1975-04-04	60.7	

Date	Feet below Surface	Feet to Sealevel
1975-07-23	84.0	
1975-07-21	84.4	
1975-07-19	83.8	
1975-07-17	83.0	
1975-07-15	82.2	
1975-07-13	81.6	
1975-07-11	81.0	
1975-07-09	80.8	
1975-07-07	80.0	
1975-07-05	78.4	
1975-07-03	78.7	
1975-07-01	79.5	
1975-06-29	78.9	
1975-06-27	79.0	
1975-06-25	80.3	
1975-06-23	81.3	
1975-06-19	81.5	
1975-06-17	80.9	
1975-06-15	79.8	
1975-06-13	78.9	
1975-06-11	75.1	
1975-06-09	73.2	
1975-06-07	74.0	
1975-06-05	73.0	
1975-06-02	72.4	
1975-05-31	70.8	
1975-05-29	71.5	
1975-05-27	73.0	
1975-05-25	72.9	
1975-05-23	73.2	
1975-05-21	74.3	
1975-05-19	74.8	
1975-05-17	74.6	
1975-05-15	72.9	
1975-05-13	72.1	
1975-05-11	72.8	
1975-05-09	73.0	
1975-05-07	72.4	
1975-05-05	72.9	
1975-05-03	70.3	
1975-05-01	67.8	
1975-04-29	65.9	
1975-04-27	64.9	
1975-04-25	63.7	
1975-04-23	64.4	
1975-04-21	65.9	
1975-04-19	67.9	
1975-04-17	69.7	
1975-04-15	70.1	
1975-04-13	70.3	
1975-04-11	69.8	
1975-04-09	68.2	
1975-04-07	66.4	
1975-04-05	63.2	
1975-04-03	59.2	

Ground-water levels, continued.

Date	Feet below Surface	Feet to Sealevel
1975-04-02	57.4	
1975-03-31	57.1	
1975-03-28	57.3	
1975-03-26	57.6	
1975-03-24	59.2	
1975-03-22	61.8	
1975-03-20	64.8	
1975-03-18	67.5	
1975-03-16	71.2	
1975-03-14	73.1	
1975-03-12	73.2	
1975-03-10	73.0	
1975-03-08	71.7	
1975-03-06	69.6	
1975-03-04	66.2	
1975-03-02	63.6	
1975-02-28	62.3	
1975-02-26	62.2	
1975-02-24	63.8	
1975-02-22	64.1	
1975-02-18	64.0	
1975-02-16	64.2	
1975-02-14	63.5	
1975-02-12	63.1	
1975-02-09	62.9	
1975-02-05	62.3	
1975-02-03	62.3	
1975-02-01	61.2	
1975-01-30	57.9	
1975-01-28	55.0	
1975-01-26	51.7	
1975-01-24	49.2	
1975-01-22	46.8	
1975-01-20	45.4	
1975-01-18	43.5	
1975-01-16	41.2	
1975-01-14	40.4	
1975-01-11	40.0	
1975-01-09	39.8	
1975-01-05	39.5	
1975-01-01	39.3	
1974-12-30	38.9	
1974-12-28	38.8	
1974-12-26	38.6	
1974-12-24	38.6	
1974-12-21	39.3	
1974-12-18	39.6	
1974-12-16	40.8	
1974-12-14	41.2	
1974-12-12	41.5	
1974-12-10	42.1	
1974-12-08	42.7	
1974-12-04	43.3	
1974-12-02	44.1	
1974-11-30	44.3	

Date	Feet below Surface	Feet to Sealevel
1975-04-01	56.9	
1975-03-29	57.2	
1975-03-27	57.5	
1975-03-25	58.5	
1975-03-23	60.3	
1975-03-21	63.4	
1975-03-19	66.2	
1975-03-17	69.2	
1975-03-15	72.3	
1975-03-13	73.0	
1975-03-11	73.3	
1975-03-09	72.6	
1975-03-07	71.3	
1975-03-05	67.8	
1975-03-03	64.5	
1975-03-01	63.3	
1975-02-27	62.0	
1975-02-25	63.0	
1975-02-23	64.0	
1975-02-21	64.2	
1975-02-17	64.1	
1975-02-15	64.1	
1975-02-13	63.2	
1975-02-11	63.0	
1975-02-08	62.2	
1975-02-04	62.4	
1975-02-02	61.9	
1975-01-31	58.7	
1975-01-29	56.9	
1975-01-27	53.4	
1975-01-25	50.3	
1975-01-23	48.0	
1975-01-21	46.2	
1975-01-19	44.7	
1975-01-17	42.3	
1975-01-15	40.5	
1975-01-12	40.3	
1975-01-10	39.9	
1975-01-08	39.4	
1975-01-04	39.4	
1974-12-31	39.0	
1974-12-29	39.0	
1974-12-27	38.7	
1974-12-25	38.7	
1974-12-23	38.8	
1974-12-19	39.5	
1974-12-17	40.3	
1974-12-15	41.1	
1974-12-13	41.4	
1974-12-11	42.0	
1974-12-09	42.4	
1974-12-07	43.2	
1974-12-03	44.0	
1974-12-01	44.2	
1974-11-27	44.4	

Ground-water levels, continued.

Date	Feet below Surface	Feet to Sealevel
1974-11-23	44.5	
1974-11-21	44.5	
1974-11-18	45.2	
1974-11-15	45.6	
1974-11-13	46.4	
1974-11-11	47.2	
1974-11-09	48.1	
1974-11-07	49.2	
1974-11-05	50.3	
1974-11-03	51.0	
1974-11-01	51.9	
1974-10-30	52.4	
1974-10-28	52.7	
1974-10-26	53.5	
1974-10-24	53.5	
1974-10-21	53.5	
1974-10-15	53.5	
1974-10-13	53.4	
1974-10-11	54.9	
1974-10-09	56.4	
1974-10-07	58.0	
1974-10-05	59.6	
1974-10-03	61.5	
1974-10-01	62.2	
1974-09-29	62.7	
1974-09-27	62.1	
1974-09-23	61.8	
1974-09-21	63.2	
1974-09-19	65.8	
1974-09-17	68.3	
1974-09-15	71.3	
1974-09-13	73.6	
1974-09-11	75.3	
1974-09-09	75.7	
1974-09-07	78.6	
1974-09-05	81.0	
1974-09-03	85.3	
1974-09-01	86.4	
1974-08-30	86.2	
1974-08-28	86.5	
1974-08-26	87.9	
1974-08-23	88.6	
1974-08-21	90.0	
1974-08-19	92.1	
1974-08-16	92.3	
1974-08-13	92.4	
1974-08-11	93.3	
1974-08-09	93.6	
1974-08-06	93.3	
1974-08-04	92.9	
1974-08-02	91.1	
1974-07-31	89.5	
1974-07-29	89.0	
1974-07-27	89.4	
1974-07-25	88.1	

Date	Feet below Surface	Feet to Sealevel
1974-11-22	44.6	
1974-11-20	44.9	
1974-11-17	45.4	
1974-11-14	46.2	
1974-11-12	47.0	
1974-11-10	47.6	
1974-11-08	48.8	
1974-11-06	49.9	
1974-11-04	50.6	
1974-11-02	51.5	
1974-10-31	52.2	
1974-10-29	52.6	
1974-10-27	53.1	
1974-10-25	53.6	
1974-10-22	53.3	
1974-10-16	53.6	
1974-10-14	53.3	
1974-10-12	54.2	
1974-10-10	55.7	
1974-10-08	57.3	
1974-10-06	58.9	
1974-10-04	60.6	
1974-10-02	62.0	
1974-09-30	62.6	
1974-09-28	62.4	
1974-09-24	61.6	
1974-09-22	62.7	
1974-09-20	64.4	
1974-09-18	66.6	
1974-09-16	69.9	
1974-09-14	72.3	
1974-09-12	75.1	
1974-09-10	75.6	
1974-09-08	77.3	
1974-09-06	79.5	
1974-09-04	82.9	
1974-09-02	86.5	
1974-08-31	86.3	
1974-08-29	86.3	
1974-08-27	87.0	
1974-08-25	88.5	
1974-08-22	88.4	
1974-08-20	91.2	
1974-08-17	92.2	
1974-08-14	92.2	
1974-08-12	92.7	
1974-08-10	93.5	
1974-08-07	93.5	
1974-08-05	3.0	
1974-08-03	92.2	
1974-08-01	90.1	
1974-07-30	89.1	
1974-07-28	89.9	
1974-07-26	88.8	
1974-07-24	87.4	

Ground-water levels, continued.

Date	Feet below Surface	Feet to Sealevel
1974-07-23	85.6	
1974-07-21	85.6	
1974-07-19	84.6	
1974-07-17	84.2	
1974-07-15	84.1	
1974-07-13	84.2	
1974-07-11	85.4	
1974-07-09	85.4	
1974-07-07	83.6	
1974-07-05	81.5	
1974-07-03	80.7	
1974-07-01	79.7	
1974-06-29	81.2	
1974-06-27	81.6	
1974-05-28	62.9	
1974-05-26	63.8	
1974-05-24	64.7	
1974-05-22	65.6	
1974-05-20	66.0	
1974-05-18	65.9	
1974-05-16	66.5	
1974-05-14	66.8	
1974-05-12	67.0	
1974-05-10	66.4	
1974-05-08	63.8	
1974-05-06	63.9	
1974-05-04	63.1	
1974-05-02	62.2	
1974-04-30	62.0	
1974-04-28	61.0	
1974-04-26	59.4	
1974-04-24	57.1	
1974-04-22	56.4	
1974-04-20	56.1	
1974-04-18	53.9	
1974-04-16	52.9	
1974-04-13	53.1	
1974-04-11	52.9	
1974-04-09	52.2	
1974-04-07	53.1	
1974-04-05	55.5	
1974-03-05	76.4	
1974-03-03	78.7	
1974-03-01	76.5	
1974-02-27	72.4	
1974-02-25	69.3	
1974-02-23	64.6	
1974-02-21	59.5	
1974-02-19	54.7	
1974-02-17	50.3	
1974-02-15	46.8	
1974-02-13	44.0	
1974-02-11	42.2	
1974-02-09	39.6	
1974-02-07	38.0	

Date	Feet below Surface	Feet to Sealevel
1974-07-22	85.7	
1974-07-20	85.5	
1974-07-18	83.9	
1974-07-16	84.3	
1974-07-14	84.0	
1974-07-12	85.1	
1974-07-10	85.7	
1974-07-08	84.6	
1974-07-06	82.4	
1974-07-04	81.3	
1974-07-02	80.4	
1974-06-30	80.6	
1974-06-28	81.5	
1974-05-29	64.1	
1974-05-27	63.1	
1974-05-25	64.6	
1974-05-23	65.2	
1974-05-21	66.1	
1974-05-19	65.7	
1974-05-17	66.3	
1974-05-15	66.7	
1974-05-13	66.9	
1974-05-11	66.8	
1974-05-09	65.6	
1974-05-07	63.7	
1974-05-05	63.6	
1974-05-03	62.5	
1974-05-01	62.1	
1974-04-29	61.8	
1974-04-27	60.2	
1974-04-25	58.3	
1974-04-23	56.5	
1974-04-21	56.3	
1974-04-19	55.6	
1974-04-17	53.1	
1974-04-15	53.0	
1974-04-12	53.2	
1974-04-10	52.6	
1974-04-08	52.3	
1974-04-06	54.1	
1974-04-04	56.2	
1974-03-04	77.6	
1974-03-02	77.2	
1974-02-28	75.3	
1974-02-26	71.3	
1974-02-24	67.3	
1974-02-22	62.1	
1974-02-20	57.2	
1974-02-18	52.4	
1974-02-16	48.3	
1974-02-14	45.3	
1974-02-12	43.1	
1974-02-10	41.3	
1974-02-08	38.2	
1974-02-06	37.1	

Ground-water levels, continued.

Date	Feet below Surface	Feet to Sealevel
1974-02-05	36.7	
1974-02-03	36.1	
1974-02-01	35.7	
1974-01-27	35.8	
1974-01-20	36.1	
1974-01-18	35.9	
1974-01-16	36.1	
1974-01-14	36.3	
1974-01-08	38.2	
1974-01-03	38.3	
1973-12-31	38.4	
1973-12-23	38.6	
1973-12-18	38.8	
1973-12-16	39.2	
1973-12-14	39.4	
1973-12-12	41.4	
1973-12-10	42.1	
1973-12-08	42.7	
1973-12-01	42.9	
1973-11-29	43.3	
1973-11-26	43.6	
1973-11-22	43.6	
1973-11-18	43.4	
1973-11-15	43.6	
1973-11-12	43.8	
1973-11-10	44.9	
1973-11-08	45.1	
1973-11-06	45.5	
1973-11-04	45.8	
1973-11-02	46.2	
1973-10-31	46.6	
1973-10-29	47.4	
1973-10-27	47.8	
1973-10-25	48.6	
1973-10-23	49.4	
1973-10-21	50.4	
1973-10-19	51.4	
1973-10-17	52.0	
1973-10-15	54.1	
1973-10-13	55.0	
1973-10-11	57.1	
1973-10-09	59.3	
1973-10-07	61.0	
1973-10-05	61.5	
1973-10-03	62.3	
1973-10-01	62.3	
1973-09-29	62.8	
1973-09-27	63.5	
1973-09-25	64.7	
1973-09-23	66.2	
1973-09-21	68.2	
1973-09-19	70.1	
1973-09-17	74.5	
1973-09-15	78.6	
1973-09-13	80.0	

Date	Feet below Surface	Feet to Sealevel
1974-02-04	36.4	
1974-02-02	35.8	
1974-01-29	35.7	
1974-01-25	36.0	
1974-01-19	36.0	
1974-01-17	36.0	
1974-01-15	36.2	
1974-01-09	36.4	
1974-01-07	38.4	
1974-01-01	38.4	
1973-12-28	38.5	
1973-12-19	38.7	
1973-12-17	39.1	
1973-12-15	39.3	
1973-12-13	39.5	
1973-12-11	41.7	
1973-12-09	42.5	
1973-12-07	42.8	
1973-11-30	43.1	
1973-11-28	43.4	
1973-11-24	43.7	
1973-11-21	43.5	
1973-11-16	43.5	
1973-11-14	43.7	
1973-11-11	44.8	
1973-11-09	45.0	
1973-11-07	45.2	
1973-11-05	45.6	
1973-11-03	45.9	
1973-11-01	46.5	
1973-10-30	47.0	
1973-10-28	47.5	
1973-10-26	48.0	
1973-10-24	49.1	
1973-10-22	49.9	
1973-10-20	50.6	
1973-10-18	51.8	
1973-10-16	53.5	
1973-10-14	54.6	
1973-10-12	55.4	
1973-10-10	57.6	
1973-10-08	60.3	
1973-10-06	61.1	
1973-10-04	62.2	
1973-10-02	62.4	
1973-09-30	62.5	
1973-09-28	63.1	
1973-09-26	64.0	
1973-09-24	65.2	
1973-09-22	67.0	
1973-09-20	69.1	
1973-09-18	71.1	
1973-09-16	76.4	
1973-09-14	79.3	
1973-09-12	81.1	

Ground-water levels, continued.

Date	Feet below Surface	Feet to Sealevel
1973-09-11	81.6	
1973-09-09	82.9	
1973-09-07	85.0	
1973-09-05	87.3	
1973-09-03	88.1	
1973-09-01	89.4	
1973-08-30	90.1	
1973-08-28	90.5	
1973-08-26	89.3	
1973-08-24	90.5	
1973-08-22	90.2	
1973-08-20	88.1	
1973-08-18	87.7	
1973-08-16	87.2	
1973-08-14	86.6	
1973-08-12	85.5	
1973-08-10	85.2	
1973-08-08	85.4	
1973-08-06	86.6	
1973-08-04	87.1	
1973-08-02	88.6	
1973-07-31	88.2	
1973-07-29	86.8	
1973-07-27	86.9	
1973-07-25	87.8	
1973-07-23	86.2	
1973-07-21	85.5	
1973-07-19	85.8	
1973-07-17	85.4	
1973-07-15	85.0	
1973-07-13	84.5	
1973-07-11	83.4	
1973-07-09	81.3	
1973-07-07	80.7	
1973-07-05	80.0	
1973-07-03	80.2	
1973-07-01	81.5	
1973-06-29	81.3	
1973-06-27	80.3	
1973-06-25	77.8	
1973-06-23	75.9	
1973-06-21	73.6	
1973-06-19	72.5	
1973-06-17	72.3	
1973-06-15	73.6	
1973-06-13	73.0	
1973-06-11	72.6	
1973-06-09	70.9	
1973-06-07	69.9	
1973-06-05	69.4	
1973-06-03	68.9	
1973-06-01	68.7	
1973-05-30	70.6	
1973-05-28	71.0	
1973-05-26	70.5	

Date	Feet below Surface	Feet to Sealevel
1973-09-10	82.3	
1973-09-08	83.7	
1973-09-06	86.1	
1973-09-04	87.9	
1973-09-02	88.9	
1973-08-31	89.8	
1973-08-29	90.6	
1973-08-27	90.0	
1973-08-25	89.7	
1973-08-23	90.6	
1973-08-21	89.1	
1973-08-19	87.8	
1973-08-17	87.5	
1973-08-15	87.1	
1973-08-13	85.9	
1973-08-11	84.9	
1973-08-09	85.3	
1973-08-07	85.9	
1973-08-05	86.9	
1973-08-03	87.4	
1973-08-01	88.7	
1973-07-30	87.2	
1973-07-28	86.7	
1973-07-26	87.9	
1973-07-24	86.4	
1973-07-22	85.6	
1973-07-20	85.6	
1973-07-18	85.7	
1973-07-16	85.3	
1973-07-14	84.9	
1973-07-12	84.2	
1973-07-10	82.1	
1973-07-08	81.2	
1973-07-06	80.5	
1973-07-04	80.1	
1973-07-02	80.5	
1973-06-30	81.8	
1973-06-28	80.5	
1973-06-26	79.7	
1973-06-24	76.9	
1973-06-22	75.0	
1973-06-20	72.8	
1973-06-18	72.4	
1973-06-16	72.8	
1973-06-14	73.3	
1973-06-12	72.8	
1973-06-10	71.6	
1973-06-08	70.4	
1973-06-06	69.3	
1973-06-04	69.5	
1973-06-02	68.5	
1973-05-31	69.0	
1973-05-29	70.9	
1973-05-27	70.6	
1973-05-25	70.4	

Ground-water levels, continued.

Date	Feet below Surface	Feet to Sealevel
1973-05-24	70.3	
1973-05-22	70.7	
1973-05-20	72.2	
1973-05-18	73.3	
1973-05-16	76.1	
1973-05-14	77.8	
1973-05-12	79.3	
1973-05-10	79.1	
1973-05-08	78.5	
1973-05-06	75.0	
1973-05-04	73.3	
1973-05-02	70.3	
1973-04-04	39.5	
1973-04-02	39.1	
1973-03-31	37.3	
1973-03-27	37.3	
1973-03-25	37.5	
1973-03-23	37.5	
1973-03-21	37.1	
1973-03-19	36.1	
1973-03-17	35.6	
1973-03-15	35.9	
1973-03-13	36.1	
1973-03-11	36.4	
1973-03-09	36.7	
1973-03-07	36.5	
1973-03-01	35.4	
1973-02-25	35.5	
1973-02-19	35.7	
1973-02-16	35.7	
1973-02-14	35.9	
1973-02-12	36.2	
1973-02-08	36.1	
1973-01-31	37.5	
1973-01-29	37.5	
1973-01-25	37.7	
1973-01-14	37.7	
1973-01-11	37.9	
1973-01-08	39.5	
1973-01-04	39.9	
1973-01-02	40.0	
1972-12-31	40.3	
1972-12-28	40.5	
1972-12-24	41.1	
1972-12-20	40.9	
1972-12-18	40.9	
1972-12-13	43.1	
1972-12-07	43.1	
1972-12-03	42.9	
1972-11-29	42.9	
1972-11-26	43.2	
1972-11-24	43.4	
1972-11-22	43.6	
1972-11-20	44.1	
1972-11-18	44.3	

Date	Feet below Surface	Feet to Sealevel
1973-05-23	70.2	
1973-05-21	71.6	
1973-05-19	72.7	
1973-05-17	75.3	
1973-05-15	76.7	
1973-05-13	79.0	
1973-05-11	79.0	
1973-05-09	78.8	
1973-05-07	76.7	
1973-05-05	73.9	
1973-05-03	71.6	
1973-04-05	40.3	
1973-04-03	39.2	
1973-04-01	38.0	
1973-03-28	37.2	
1973-03-26	37.4	
1973-03-24	37.4	
1973-03-22	37.4	
1973-03-20	36.3	
1973-03-18	35.7	
1973-03-16	35.5	
1973-03-14	36.0	
1973-03-12	36.3	
1973-03-10	36.6	
1973-03-08	36.6	
1973-03-04	35.5	
1973-02-28	35.5	
1973-02-23	35.6	
1973-02-18	35.6	
1973-02-15	35.8	
1973-02-13	36.0	
1973-02-09	36.3	
1973-02-07	35.9	
1973-01-30	37.4	
1973-01-28	37.6	
1973-01-20	37.7	
1973-01-12	37.8	
1973-01-09	39.4	
1973-01-07	39.8	
1973-01-03	39.8	
1973-01-01	40.2	
1972-12-30	40.4	
1972-12-27	41.0	
1972-12-23	41.0	
1972-12-19	40.8	
1972-12-14	41.0	
1972-12-08	43.2	
1972-12-05	43.0	
1972-12-01	42.8	
1972-11-27	43.0	
1972-11-25	43.3	
1972-11-23	43.5	
1972-11-21	43.7	
1972-11-19	44.2	
1972-11-17	44.4	

Ground-water levels, continued.

Date	Feet below Surface	Feet to Sealevel
1972-11-16	44.5	
1972-11-14	46.4	
1972-11-12	47.2	
1972-11-10	47.6	
1972-11-08	48.3	
1972-11-06	48.5	
1972-11-04	49.0	
1972-11-02	49.5	
1972-10-31	50.4	
1972-10-29	51.2	
1972-10-27	52.0	
1972-10-25	54.3	
1972-10-23	56.6	
1972-10-21	58.7	
1972-10-19	60.4	
1972-10-17	61.8	
1972-10-15	62.4	
1972-10-13	62.8	
1972-10-11	63.0	
1972-10-06	63.7	
1972-10-02	63.7	
1972-09-30	63.5	
1972-09-28	63.3	
1972-09-26	63.5	
1972-09-24	64.1	
1972-09-22	64.7	
1972-09-20	65.5	
1972-09-18	67.5	
1972-09-16	69.2	
1972-09-14	72.1	
1972-09-12	74.7	
1972-09-10	78.5	
1972-09-08	82.1	
1972-09-06	83.0	
1972-09-04	85.5	
1972-09-02	88.7	
1972-08-31	90.4	
1972-08-29	91.0	
1972-08-27	91.8	
1972-08-25	92.9	
1972-08-23	92.1	
1972-08-21	92.1	
1972-08-19	91.7	
1972-08-17	90.8	
1972-08-15	90.1	
1972-08-13	91.3	
1972-08-11	90.0	
1972-08-07	90.4	
1972-08-05	91.8	
1972-08-03	91.8	
1972-08-01	91.7	
1972-07-30	91.4	
1972-07-28	89.0	
1972-07-26	85.5	
1972-07-24	84.4	

Date	Feet below Surface	Feet to Sealevel
1972-11-15	45.8	
1972-11-13	46.9	
1972-11-11	47.4	
1972-11-09	47.9	
1972-11-07	48.4	
1972-11-05	48.7	
1972-11-03	49.2	
1972-11-01	49.9	
1972-10-30	50.8	
1972-10-28	51.7	
1972-10-26	53.4	
1972-10-24	55.5	
1972-10-22	57.7	
1972-10-20	59.6	
1972-10-18	61.6	
1972-10-16	62.3	
1972-10-14	62.6	
1972-10-12	62.9	
1972-10-10	63.6	
1972-10-03	63.8	
1972-10-01	63.6	
1972-09-29	63.4	
1972-09-27	63.2	
1972-09-25	63.8	
1972-09-23	64.2	
1972-09-21	64.9	
1972-09-19	66.6	
1972-09-17	68.5	
1972-09-15	70.8	
1972-09-13	73.8	
1972-09-11	76.8	
1972-09-09	80.1	
1972-09-07	82.8	
1972-09-05	84.0	
1972-09-03	87.2	
1972-09-01	90.3	
1972-08-30	90.5	
1972-08-28	91.3	
1972-08-26	92.5	
1972-08-24	92.8	
1972-08-22	92.0	
1972-08-20	92.0	
1972-08-18	90.9	
1972-08-16	90.6	
1972-08-14	90.2	
1972-08-12	91.0	
1972-08-08	89.9	
1972-08-06	91.2	
1972-08-04	91.9	
1972-08-02	91.6	
1972-07-31	91.5	
1972-07-29	90.4	
1972-07-27	88.4	
1972-07-25	85.1	
1972-07-23	84.3	

Ground-water levels, continued.

Date	Feet below Surface	Feet to Sealevel
1972-07-20	84.2	
1972-07-18	83.5	
1972-07-16	82.4	
1972-07-14	82.2	
1972-07-12	82.5	
1972-07-10	83.6	
1972-07-08	84.1	
1972-07-06	83.7	
1972-07-04	83.3	
1972-07-02	82.9	
1972-06-30	81.1	
1972-06-28	81.9	
1972-06-26	82.5	
1972-06-23	82.6	
1972-06-21	81.6	
1972-06-19	80.1	
1972-06-17	78.6	
1972-06-15	76.1	
1972-06-13	74.9	
1972-06-11	74.4	
1972-06-09	76.1	
1972-06-07	76.9	
1972-06-03	76.1	
1972-06-01	74.5	
1972-05-30	71.6	
1972-05-28	71.9	
1972-05-26	72.5	
1972-05-24	72.9	
1972-05-22	71.8	
1972-05-20	69.4	
1972-05-18	68.0	
1972-05-16	67.2	
1972-05-14	66.4	
1972-05-12	66.3	
1972-05-09	66.1	
1972-05-07	66.7	
1972-05-05	66.3	
1972-05-03	66.7	
1972-05-01	67.3	
1972-04-29	66.7	
1972-04-27	65.3	
1972-04-25	66.0	
1972-04-23	66.7	
1972-04-21	65.7	
1972-04-19	65.3	
1972-04-17	65.1	
1972-04-15	63.9	
1972-04-13	65.5	
1972-04-11	67.1	
1972-04-09	66.9	
1972-04-07	66.2	
1972-04-05	66.0	
1972-04-03	67.5	
1972-04-01	68.6	
1972-03-30	69.3	

Date	Feet below Surface	Feet to Sealevel
1972-07-19	84.1	
1972-07-17	82.7	
1972-07-15	82.2	
1972-07-13	82.4	
1972-07-11	83.1	
1972-07-09	84.2	
1972-07-07	84.0	
1972-07-05	83.4	
1972-07-03	83.2	
1972-07-01	81.4	
1972-06-29	80.5	
1972-06-27	82.7	
1972-06-25	82.7	
1972-06-22	82.8	
1972-06-20	80.9	
1972-06-18	79.5	
1972-06-16	77.1	
1972-06-14	75.5	
1972-06-12	73.6	
1972-06-10	75.6	
1972-06-08	76.7	
1972-06-04	76.8	
1972-06-02	75.2	
1972-05-31	71.7	
1972-05-29	71.8	
1972-05-27	72.2	
1972-05-25	72.8	
1972-05-23	72.7	
1972-05-21	70.3	
1972-05-19	68.5	
1972-05-17	67.8	
1972-05-15	66.7	
1972-05-13	66.2	
1972-05-11	66.0	
1972-05-08	66.3	
1972-05-06	66.6	
1972-05-04	67.0	
1972-05-02	67.2	
1972-04-30	67.1	
1972-04-28	66.1	
1972-04-26	65.8	
1972-04-24	66.8	
1972-04-22	66.1	
1972-04-20	65.6	
1972-04-18	65.2	
1972-04-16	64.6	
1972-04-14	64.4	
1972-04-12	66.6	
1972-04-10	67.0	
1972-04-08	66.7	
1972-04-06	65.9	
1972-04-04	66.8	
1972-04-02	68.5	
1972-03-31	68.6	
1972-03-29	69.8	

Ground-water levels, continued.

Date	Feet below Surface	Feet to Sealevel
1972-03-28	70.4	
1972-03-26	71.8	
1972-03-24	72.7	
1972-03-22	74.0	
1972-03-20	75.8	
1972-03-18	77.4	
1972-03-13	77.3	
1972-03-11	77.1	
1972-03-09	76.9	
1972-03-07	76.2	
1972-03-05	74.5	
1972-03-03	72.5	
1972-03-01	70.4	
1972-02-28	68.8	
1972-02-26	66.8	
1972-02-24	64.7	
1972-02-22	62.4	
1972-02-20	60.8	
1972-02-18	59.1	
1972-02-16	56.8	
1972-02-14	54.5	
1972-02-12	53.0	
1972-02-10	50.2	
1972-02-08	45.7	
1972-02-06	42.5	
1972-02-04	38.7	
1972-02-02	36.8	
1972-01-31	36.0	
1972-01-28	36.1	
1972-01-26	36.3	
1972-01-24	35.9	
1972-01-19	35.9	
1972-01-17	35.7	
1972-01-13	35.9	
1972-01-11	36.1	
1972-01-09	36.1	
1972-01-07	37.7	
1972-01-05	38.0	
1972-01-03	38.2	
1972-01-01	38.9	
1971-12-30	39.1	
1971-12-28	39.3	
1971-12-22	39.4	
1971-12-20	39.9	
1971-12-18	40.6	
1971-12-16	40.3	
1971-12-14	39.3	
1971-12-12	39.5	
1971-12-10	39.7	
1971-12-08	39.7	
1971-12-06	40.6	
1971-12-04	40.8	
1971-12-02	41.0	
1971-11-30	41.3	
1971-11-28	41.9	

Date	Feet below Surface	Feet to Sealevel
1972-03-27	70.7	
1972-03-25	72.3	
1972-03-23	73.4	
1972-03-21	74.7	
1972-03-19	77.0	
1972-03-14	77.4	
1972-03-12	77.2	
1972-03-10	77.0	
1972-03-08	76.7	
1972-03-06	75.5	
1972-03-04	73.5	
1972-03-02	71.3	
1972-02-29	69.4	
1972-02-27	68.1	
1972-02-25	65.8	
1972-02-23	63.5	
1972-02-21	61.6	
1972-02-19	59.9	
1972-02-17	57.9	
1972-02-15	55.9	
1972-02-13	53.7	
1972-02-11	51.3	
1972-02-09	47.0	
1972-02-07	43.5	
1972-02-05	40.7	
1972-02-03	37.6	
1972-02-01	36.1	
1972-01-29	35.9	
1972-01-27	36.2	
1972-01-25	36.0	
1972-01-20	36.0	
1972-01-18	35.8	
1972-01-14	35.8	
1972-01-12	36.0	
1972-01-10	36.2	
1972-01-08	36.0	
1972-01-06	37.9	
1972-01-04	38.1	
1972-01-02	38.7	
1971-12-31	39.0	
1971-12-29	39.2	
1971-12-23	39.3	
1971-12-21	39.7	
1971-12-19	40.3	
1971-12-17	40.7	
1971-12-15	40.2	
1971-12-13	39.4	
1971-12-11	39.6	
1971-12-09	39.8	
1971-12-07	40.1	
1971-12-05	40.7	
1971-12-03	40.9	
1971-12-01	41.2	
1971-11-29	41.6	
1971-11-27	42.1	

Ground-water levels, continued.

Date	Feet below Surface	Feet to Sealevel
1971-11-26	42.4	
1971-11-24	42.9	
1971-11-22	43.4	
1971-11-20	43.9	
1971-11-18	44.6	
1971-11-16	48.8	
1971-11-14	49.9	
1971-11-12	51.1	
1971-11-10	51.8	
1971-11-08	52.4	
1971-11-06	53.1	
1971-11-04	54.0	
1971-11-02	54.9	
1971-10-31	56.1	
1971-10-29	57.3	
1971-10-27	59.0	
1971-10-25	60.6	
1971-10-23	61.4	
1971-10-21	60.9	
1971-10-19	61.6	
1971-10-17	61.8	
1971-10-15	61.4	
1971-10-13	60.6	
1971-10-11	60.4	
1971-10-09	60.4	
1971-10-07	60.6	
1971-10-05	62.3	
1971-10-03	65.0	
1971-10-01	67.1	
1971-09-29	67.0	
1971-09-27	67.0	
1971-09-25	69.6	
1971-09-23	70.9	
1971-09-21	74.5	
1971-09-19	78.0	
1971-09-17	78.9	
1971-09-15	79.5	
1971-09-13	81.8	
1971-09-11	83.2	
1971-09-09	83.7	
1971-09-07	83.5	
1971-09-05	83.5	
1971-09-03	83.2	
1971-09-01	83.1	
1971-08-30	84.0	
1971-08-28	84.4	
1971-08-26	84.1	
1971-08-24	84.7	
1971-08-22	86.1	
1971-08-20	87.1	
1971-08-18	87.7	
1971-08-16	87.8	
1971-08-14	87.4	
1971-08-12	86.9	
1971-08-10	87.3	

Date	Feet below Surface	Feet to Sealevel
1971-11-25	42.7	
1971-11-23	43.2	
1971-11-21	43.6	
1971-11-19	44.2	
1971-11-17	44.8	
1971-11-15	49.4	
1971-11-13	50.4	
1971-11-11	51.6	
1971-11-09	52.1	
1971-11-07	52.7	
1971-11-05	53.5	
1971-11-03	54.5	
1971-11-01	55.3	
1971-10-30	56.7	
1971-10-28	58.0	
1971-10-26	59.8	
1971-10-24	60.9	
1971-10-22	61.7	
1971-10-20	61.4	
1971-10-18	61.7	
1971-10-16	61.7	
1971-10-14	61.0	
1971-10-12	60.5	
1971-10-10	60.3	
1971-10-08	60.5	
1971-10-06	61.5	
1971-10-04	63.6	
1971-10-02	66.5	
1971-09-30	67.3	
1971-09-28	67.1	
1971-09-26	68.0	
1971-09-24	70.6	
1971-09-22	72.9	
1971-09-20	75.8	
1971-09-18	78.8	
1971-09-16	79.0	
1971-09-14	80.8	
1971-09-12	82.4	
1971-09-10	83.6	
1971-09-08	83.6	
1971-09-06	83.6	
1971-09-04	83.4	
1971-09-02	82.7	
1971-08-31	83.8	
1971-08-29	84.2	
1971-08-27	84.3	
1971-08-25	84.6	
1971-08-23	84.9	
1971-08-21	86.7	
1971-08-19	87.4	
1971-08-17	87.9	
1971-08-15	87.5	
1971-08-13	87.0	
1971-08-11	87.1	
1971-08-09	87.2	

Ground-water levels, continued.

Date	Feet below Surface	Feet to Sealevel
1971-08-08	87.0	
1971-08-06	86.8	
1971-08-04	85.5	
1971-08-02	83.8	
1971-07-31	83.8	
1971-07-29	85.0	
1971-07-27	86.5	
1971-07-25	85.2	
1971-07-23	81.6	
1971-07-21	82.2	
1971-07-19	82.6	
1971-07-17	83.5	
1971-07-15	81.8	
1971-07-13	81.1	
1971-07-11	81.6	
1971-07-09	81.2	
1971-07-07	81.0	
1971-07-05	81.2	
1971-07-03	81.3	
1971-07-01	80.7	
1971-06-29	80.8	
1971-06-27	80.6	
1971-06-25	79.3	
1971-06-23	78.3	
1971-06-21	75.1	
1971-06-19	71.6	
1971-06-17	67.4	
1971-06-15	65.1	
1971-06-13	64.2	
1971-06-11	63.3	
1971-06-09	62.3	
1971-06-07	61.6	
1971-06-05	61.3	
1971-06-03	61.8	
1971-06-01	62.1	
1971-05-30	62.4	
1971-05-28	63.1	
1971-05-26	63.2	
1971-05-24	62.2	
1971-05-22	60.7	
1971-05-20	59.1	
1971-05-18	59.1	
1971-05-16	59.1	
1971-05-14	59.3	
1971-05-12	59.6	
1971-05-10	60.4	
1971-05-08	61.9	
1971-05-06	62.1	
1971-05-04	60.4	
1971-05-02	58.3	
1971-04-30	57.3	
1971-04-28	56.2	
1971-04-26	55.8	
1971-04-24	57.7	
1971-04-22	60.2	

Date	Feet below Surface	Feet to Sealevel
1971-08-07	86.9	
1971-08-05	86.3	
1971-08-03	84.8	
1971-08-01	83.6	
1971-07-30	84.1	
1971-07-28	85.1	
1971-07-26	85.9	
1971-07-24	83.4	
1971-07-22	81.5	
1971-07-20	82.5	
1971-07-18	83.3	
1971-07-16	83.7	
1971-07-14	81.5	
1971-07-12	81.8	
1971-07-10	81.5	
1971-07-08	81.1	
1971-07-06	80.9	
1971-07-04	81.5	
1971-07-02	80.9	
1971-06-30	81.0	
1971-06-28	80.7	
1971-06-26	79.6	
1971-06-24	78.7	
1971-06-22	77.0	
1971-06-20	73.8	
1971-06-18	69.5	
1971-06-16	66.4	
1971-06-14	64.3	
1971-06-12	63.7	
1971-06-10	62.4	
1971-06-08	61.9	
1971-06-06	61.4	
1971-06-04	61.6	
1971-06-02	62.0	
1971-05-31	62.1	
1971-05-29	62.8	
1971-05-27	63.3	
1971-05-25	62.9	
1971-05-23	61.7	
1971-05-21	59.5	
1971-05-19	59.0	
1971-05-17	59.0	
1971-05-15	59.2	
1971-05-13	59.2	
1971-05-11	60.2	
1971-05-09	61.7	
1971-05-07	62.0	
1971-05-05	62.2	
1971-05-03	59.0	
1971-05-01	57.5	
1971-04-29	57.1	
1971-04-27	55.7	
1971-04-25	56.7	
1971-04-23	59.1	
1971-04-21	60.8	

Ground-water levels, continued.

Date	Feet below Surface	Feet to Sealevel
1971-04-20	61.7	
1971-04-18	64.4	
1971-04-16	68.3	
1971-04-14	68.5	
1971-04-12	68.6	
1971-04-10	69.5	
1971-04-08	73.1	
1971-04-06	74.3	
1971-04-04	77.9	
1971-04-02	81.0	
1971-03-31	81.2	
1971-03-29	81.2	
1971-03-27	82.1	
1971-03-25	81.7	
1971-03-23	80.2	
1971-03-21	77.5	
1971-03-19	74.2	
1971-03-17	70.4	
1971-03-15	69.0	
1971-03-13	69.0	
1971-03-11	68.3	
1971-03-09	63.5	
1971-03-07	63.3	
1971-03-05	61.5	
1971-03-03	60.5	
1971-03-01	59.2	
1971-02-27	55.7	
1971-02-25	52.6	
1971-02-23	47.7	
1971-02-21	45.2	
1971-02-19	44.0	
1971-02-17	40.6	
1971-02-15	38.1	
1971-02-13	37.1	
1971-02-11	36.4	
1971-02-09	34.8	
1971-02-07	34.6	
1971-02-05	34.4	
1971-02-03	33.8	
1971-02-01	34.1	
1971-01-30	33.8	
1971-01-28	32.6	
1971-01-26	32.1	
1971-01-24	31.7	
1971-01-22	31.7	
1971-01-20	31.7	
1971-01-18	31.7	
1971-01-16	31.7	
1971-01-14	32.4	
1971-01-12	32.7	
1971-01-10	32.5	
1971-01-08	32.3	
1971-01-06	32.5	
1971-01-04	32.6	
1971-01-02	33.1	

Date	Feet below Surface	Feet to Sealevel
1971-04-19	62.8	
1971-04-17	66.3	
1971-04-15	68.6	
1971-04-13	68.3	
1971-04-11	69.3	
1971-04-09	69.9	
1971-04-07	73.8	
1971-04-05	75.7	
1971-04-03	80.4	
1971-04-01	81.1	
1971-03-30	81.1	
1971-03-28	82.0	
1971-03-26	82.2	
1971-03-24	81.1	
1971-03-22	79.0	
1971-03-20	76.2	
1971-03-18	72.1	
1971-03-16	68.4	
1971-03-14	69.2	
1971-03-12	68.5	
1971-03-10	64.7	
1971-03-08	63.2	
1971-03-06	62.5	
1971-03-04	61.2	
1971-03-02	59.9	
1971-02-28	57.4	
1971-02-26	53.9	
1971-02-24	50.1	
1971-02-22	45.9	
1971-02-20	44.7	
1971-02-18	42.7	
1971-02-16	39.4	
1971-02-14	37.4	
1971-02-12	35.9	
1971-02-10	35.0	
1971-02-08	34.7	
1971-02-06	34.5	
1971-02-04	34.2	
1971-02-02	33.9	
1971-01-31	33.9	
1971-01-29	33.0	
1971-01-27	32.4	
1971-01-25	31.7	
1971-01-23	31.7	
1971-01-21	31.7	
1971-01-19	31.7	
1971-01-17	31.7	
1971-01-15	31.6	
1971-01-13	32.8	
1971-01-11	32.6	
1971-01-09	32.4	
1971-01-07	32.4	
1971-01-05	32.5	
1971-01-03	32.9	
1971-01-01	33.9	

Ground-water levels, continued.

Date	Feet below Surface	Feet to Sealevel
1970-12-31	34.0	
1970-12-29	34.2	
1970-12-27	34.3	
1970-12-25	34.5	
1970-12-23	34.7	
1970-12-21	34.9	
1970-12-19	35.2	
1970-12-17	35.3	
1970-12-15	37.3	
1970-12-13	37.3	
1970-12-11	37.0	
1970-12-09	36.8	
1970-12-07	37.1	
1970-12-05	37.5	
1970-12-03	37.8	
1970-12-01	38.2	
1970-11-29	38.4	
1970-11-27	38.6	
1970-11-25	38.8	
1970-11-23	39.2	
1970-11-21	39.4	
1970-11-19	39.7	
1970-11-17	41.6	
1970-11-15	42.1	
1970-11-13	42.5	
1970-11-11	42.9	
1970-11-09	42.9	
1970-11-07	43.3	
1970-11-05	45.5	
1970-11-03	47.2	
1970-11-01	49.2	
1970-10-30	50.7	
1970-10-28	52.7	
1970-10-26	54.0	
1970-10-24	55.0	
1970-10-22	56.0	
1970-10-20	58.7	
1970-10-18	59.4	
1970-10-16	60.4	
1970-10-14	61.5	
1970-10-12	62.6	
1970-10-10	62.6	
1970-10-08	63.6	
1970-10-06	64.5	
1970-10-04	65.1	
1970-10-02	64.0	
1970-09-30	63.2	
1970-09-28	63.3	
1970-09-26	64.5	
1970-09-24	65.2	
1970-09-22	67.4	
1970-09-20	69.4	
1970-09-18	69.4	
1970-09-16	68.5	
1970-09-14	67.7	

Date	Feet below Surface	Feet to Sealevel
1970-12-30	34.1	
1970-12-28	34.2	
1970-12-26	34.4	
1970-12-24	34.6	
1970-12-22	34.8	
1970-12-20	35.1	
1970-12-18	35.3	
1970-12-16	35.9	
1970-12-14	37.4	
1970-12-12	37.2	
1970-12-10	36.9	
1970-12-08	37.0	
1970-12-06	37.3	
1970-12-04	37.6	
1970-12-02	38.1	
1970-11-30	38.3	
1970-11-28	38.5	
1970-11-26	38.7	
1970-11-24	39.0	
1970-11-22	39.3	
1970-11-20	39.5	
1970-11-18	40.7	
1970-11-16	41.8	
1970-11-14	42.2	
1970-11-12	42.8	
1970-11-10	43.0	
1970-11-08	43.2	
1970-11-06	44.2	
1970-11-04	46.5	
1970-11-02	48.2	
1970-10-31	50.2	
1970-10-29	51.2	
1970-10-27	53.5	
1970-10-25	54.5	
1970-10-23	55.5	
1970-10-21	56.6	
1970-10-19	59.3	
1970-10-17	59.9	
1970-10-15	60.8	
1970-10-13	62.0	
1970-10-11	62.7	
1970-10-09	62.7	
1970-10-07	64.4	
1970-10-05	64.9	
1970-10-03	64.4	
1970-10-01	63.5	
1970-09-29	62.8	
1970-09-27	64.0	
1970-09-25	64.7	
1970-09-23	66.1	
1970-09-21	68.9	
1970-09-19	69.5	
1970-09-17	68.8	
1970-09-15	68.1	
1970-09-13	67.8	

Ground-water levels, continued.

Date	Feet below Surface	Feet to Sealevel
1970-09-12	68.8	
1970-09-10	71.9	
1970-09-08	73.8	
1970-09-06	74.3	
1970-09-04	74.2	
1970-09-02	76.4	
1970-08-31	79.5	
1970-08-29	81.1	
1970-08-27	80.9	
1970-08-25	80.5	
1970-08-23	81.2	
1970-08-21	81.1	
1970-08-19	80.4	
1970-08-17	80.4	
1970-08-15	80.3	
1970-08-13	80.2	
1970-08-11	79.6	
1970-08-09	78.0	
1970-08-07	76.7	
1970-08-05	77.5	
1970-08-03	78.0	
1970-08-01	78.2	
1970-07-30	78.5	
1970-07-28	78.0	
1970-07-26	76.8	
1970-07-24	76.1	
1970-07-22	75.8	
1970-07-20	74.9	
1970-07-18	74.6	
1970-07-16	74.6	
1970-07-14	73.9	
1970-07-12	72.0	
1970-07-10	70.4	
1970-07-08	69.0	
1970-07-06	69.0	
1970-07-04	68.0	
1970-07-02	69.1	
1970-06-30	71.3	
1970-06-28	72.7	
1970-06-26	73.4	
1970-06-24	73.6	
1970-06-22	72.6	
1970-06-20	71.7	
1970-06-18	70.6	
1970-06-16	69.9	
1970-06-14	69.5	
1970-06-12	69.1	
1970-06-10	68.9	
1970-06-08	68.7	
1970-06-06	67.9	
1970-06-04	66.2	
1970-06-02	64.1	
1970-05-31	64.3	
1970-05-29	64.2	
1970-05-27	64.3	

Date	Feet below Surface	Feet to Sealevel
1970-09-11	70.3	
1970-09-09	73.1	
1970-09-07	74.2	
1970-09-05	74.0	
1970-09-03	75.9	
1970-09-01	78.5	
1970-08-30	81.0	
1970-08-28	81.0	
1970-08-26	80.8	
1970-08-24	81.1	
1970-08-22	81.3	
1970-08-20	80.6	
1970-08-18	80.3	
1970-08-16	80.5	
1970-08-14	80.1	
1970-08-12	79.8	
1970-08-10	78.8	
1970-08-08	77.1	
1970-08-06	77.4	
1970-08-04	77.6	
1970-08-02	78.2	
1970-07-31	78.3	
1970-07-29	78.3	
1970-07-27	77.5	
1970-07-25	76.2	
1970-07-23	76.0	
1970-07-21	75.3	
1970-07-19	74.8	
1970-07-17	74.5	
1970-07-15	74.6	
1970-07-13	73.2	
1970-07-11	71.0	
1970-07-09	69.9	
1970-07-07	69.2	
1970-07-05	68.8	
1970-07-03	68.2	
1970-07-01	69.4	
1970-06-29	72.2	
1970-06-27	73.2	
1970-06-25	73.7	
1970-06-23	73.2	
1970-06-21	71.7	
1970-06-19	71.5	
1970-06-17	70.0	
1970-06-15	69.8	
1970-06-13	69.3	
1970-06-11	68.4	
1970-06-09	69.0	
1970-06-07	68.5	
1970-06-05	67.0	
1970-06-03	64.5	
1970-06-01	64.2	
1970-05-30	64.4	
1970-05-28	64.2	
1970-05-26	64.5	

Ground-water levels, continued.

Date	Feet below Surface	Feet to Sealevel
1970-05-25	64.9	
1970-05-23	64.9	
1970-05-21	64.5	
1970-04-08	69.7	
1970-02-11	29	
1969-12-18	34.3	
1969-10-22	48.6	
1969-08-27	63.2	
1969-06-27	58.5	
1969-05-06	57.2	
1969-03-11	31	
1969-01-13	35.5	
1968-11-19	41.6	
1968-09-23	62.4	
1968-07-30	75.3	
1968-06-04	69.4	
1968-04-09	60.3	
1968-02-13	45.9	
1967-12-17	34.7	
1967-10-23	58.1	
1967-08-29	73.4	
1967-07-06	65.5	
1967-05-09	38.3	
1967-03-14	60	
1967-01-17	37.6	
1966-11-21	47.3	
1966-09-26	57	
1966-08-02	71.3	
1966-06-07	63.9	
1966-04-12	62.6	
1966-02-15	33.2	
1965-12-20	37.1	
1965-10-19	50.3	
1965-08-26	73.1	
1970-05-24	65.2	
1970-05-22	64.7	
1970-05-08	63.8	
1970-03-11	42.4	
1970-01-16	33.5	
1969-11-19	36.9	
1969-09-24	56.9	
1969-07-31	62.3	
1969-06-03	52.4	
1969-04-08	40.7	
1969-02-11	34.8	
1968-12-19	37.6	
1968-10-21	57.2	
1968-08-27	74.9	
1968-07-01	77.8	
1968-05-07	66.9	
1968-03-11	54.8	
1968-01-16	34.4	
1967-11-21	43.2	
1967-09-26	59.7	
1967-08-01	73.7	
1967-06-05	55.1	
1967-04-12	46.1	
1967-02-14	37.1	
1966-12-20	38.6	
1966-10-25	54.8	
1966-08-30	72.6	
1966-07-06	68.6	
1966-05-13	66.5	
1966-03-15	51.5	
1966-01-13	33.6	
1965-11-15	44.5	
1965-09-23	59.4	

Map ID:	84		
Agency cd:	USGS	Site no:	364535120194701
Site name:	013S015E35E001M		
Latitude:	364535	EDR Site id:	USGS3202475
Longitude:	1201947	Dec lat:	36.75967179
Dec lon:	-120.33072261	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	019
Country:	US	Land net:	NWSWNWS25 T13S R15E M
Location map:	MENDOTA DAM	Map scale:	24000
Altitude:	166.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5.		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	TulareBuena Vista Lakes. California. Area = 8510 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	19510205
Date inventoried:	19560110	Mean greenwich time offset:	PST

Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	230	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1962-09-01	Ground water data end date:	1962-09-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1962-09-01	17.00	

Map ID:	84		
Agency cd:	USGS	Site no:	364535120194703
Site name:	013S015E35E003M		
Latitude:	364535	EDR Site id:	USGS3202477
Longitude:	1201947	Dec lat:	36.75967179
Dec lon:	-120.33072261	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	019
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	166.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	2.5		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	TulareBuena Vista Lakes. California. Area = 8510 sq.mi.		
Topographic:	Not Reported		
Site type:	Ground-water other than Spring	Date construction:	19510101
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	735	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	1952-10-16
Water quality data end date:	1952-10-16	Water quality data count:	1
Ground water data begin date:	1962-09-01	Ground water data end date:	1962-09-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1962-09-01	124.00	

Map ID:	84		
Agency cd:	USGS	Site no:	364535120194702
Site name:	013S015E35E002M		
Latitude:	364535	EDR Site id:	USGS3202476
Longitude:	1201947	Dec lat:	36.75967179
Dec lon:	-120.33072261	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	019
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	166.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	2.5		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	TulareBuena Vista Lakes. California. Area = 8510 sq.mi.		
Topographic:	Not Reported		
Site type:	Ground-water other than Spring	Date construction:	19510101
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	440	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	1952-10-20
Water quality data end date:	1952-10-20	Water quality data count:	1
Ground water data begin date:	1962-09-01	Ground water data end date:	1962-09-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1962-09-01	52.00	

GEOCHECK VERSION 2.1
STATE DATABASE WELL INFORMATION

Map ID:	83		
Agency cd:	USGS	Site no:	364535120184701
Site name:	013S015E35D003M		
Latitude:	364535	EDR Site id:	USGS3202474
Longitude:	1201847	Dec lat:	36.75967168
Dec lon:	-120.31405543	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	019
Country:	US	Land net:	Not Reported
Location map:	MENDOTA DAM	Map scale:	24000
Altitude:	166.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	2.5		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	TulareBuena Vista Lakes. California. Area = 8510 sq.mi.		
Topographic:	Not Reported		
Site type:	Ground-water other than Spring	Date construction:	19510130
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	735	Hole depth:	735
Source of depth data:	Not Reported		
Project number:	479400204		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1951-02-15	Ground water data end date:	1983-02-11
Ground water data count:	163		

Ground-water levels, Number of Measurements: 163

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1983-02-11	76.4		1982-10-06	92.1	
1982-01-28	61.6		1981-09-16	103.3	
1981-02-04	53.3		1980-10-04	107.3	
1980-01-24	98.40		1979-09-18	114.0	
1979-01-24	106.4		1978-10-02	121.0	
1978-01-18	120.3		1977-10-05	127.2	
1977-01-14	102.5		1976-10-08	113.9	
1976-07-26	109		1976-01-19	103.1	
1975-10-07	110.4		1975-01-20	105.8	
1974-10-09	113.7		1974-01-30	109.3	
1973-10-09	120.2		1973-02-09	115.3	
1972-10-12	125		1972-02-09	120.4	
1972-01-04	121.7		1971-09-30	125.7	
1971-02-05	122		1970-09-28	129.2	
1968-12-18	85		1967-12-20	83.3	
1966-12-29	80		1965-02-08	127.2	
1964-10-05	129		1964-02-10	120.7	
1963-02-07	119.2		1962-10-16	129.2	
1962-05-21	118.10		1962-04-23	116.00	
1962-03-20	116.50		1962-02-27	116.3	
1962-01-16	117.40		1962-01-01	125.00	

Ground-water levels, continued.

Date	Feet below Surface	Feet to Sealevel
1961-12-18	119.80	
1961-10-23	122	
1961-08-21	122.00	
1961-06-21	116.50	
1961-04-20	113.60	
1961-02-24	111.8	
1960-12-15	114.30	
1960-10-20	117.50	
1960-08-25	118.00	
1960-06-23	114.40	
1960-03-31	109.50	
1960-01-28	107.30	
1959-11-30	111.40	
1959-10-13	113.70	
1959-07-30	112.90	
1959-05-29	109.40	
1959-03-26	105.40	
1959-01-29	105.00	
1958-12-01	107.20	
1958-10-10	108.20	
1958-08-01	102.50	
1958-06-03	96.20	
1958-03-25	98.70	
1958-01-29	101.40	
1957-11-26	105.50	
1957-10-15	106.30	
1957-08-28	105.70	
1957-07-02	102.50	
1957-04-30	101.80	
1957-02-28	99.70	
1957-01-30	100.10	
1956-12-04	100.90	
1956-10-23	101.40	
1956-08-28	100.90	
1956-06-26	97.00	
1956-05-01	94.80	
1956-02-21	92.30	
1956-01-04	96.50	
1955-11-01	99.30	
1955-08-30	97.90	
1955-06-29	94.20	
1955-04-27	92.40	
1955-03-03	90.30	
1955-01-05	93.90	
1954-10-06	95.80	
1954-08-04	93.50	
1954-05-26	91.10	
1954-04-05	90.30	
1953-12-03	89.70	
1953-08-04	88.70	
1953-04-29	88.80	
1953-03-02	82.70	
1952-12-30	84.60	
1952-11-03	79.10	
1952-09-03	86.40	

Date	Feet below Surface	Feet to Sealevel
1961-11-21	121.20	
1961-09-18	122.60	
1961-07-19	119.50	
1961-05-26	115.80	
1961-03-23	113.30	
1961-01-19	112.50	
1960-12-05	115.00	
1960-09-21	118.70	
1960-08-01	116.50	
1960-05-02	112.30	
1960-02-26	107.80	
1960-01-07	108.60	
1959-10-29	113.50	
1959-08-27	114.30	
1959-06-29	110.90	
1959-05-01	107.50	
1959-03-05	104.70	
1959-01-05	106.70	
1958-11-03	108.40	
1958-08-27	103.90	
1958-06-27	99.40	
1958-04-29	96.60	
1958-02-28	100.00	
1958-01-03	102.80	
1957-10-29	106.20	
1957-10-01	106.30	
1957-07-31	104.30	
1957-06-04	101.50	
1957-04-02	100.40	
1957-02-21	99.90	
1957-01-03	100.30	
1956-10-30	101.80	
1956-09-26	101.90	
1956-07-31	97.20	
1956-05-29	96.10	
1956-03-23	91.80	
1956-01-31	93.90	
1955-11-29	99.00	
1955-09-28	99.50	
1955-07-26	95.40	
1955-05-26	93.70	
1955-04-01	91.10	
1955-01-28	91.60	
1954-12-02	95.30	
1954-09-03	95.30	
1954-06-28	91.40	
1954-04-29	91.10	
1954-01-18	88.80	
1953-09-22	91.80	
1953-06-01	86.60	
1953-04-01	85.00	
1953-02-02	82.30	
1952-12-01	83.60	
1952-10-02	81.40	
1952-07-30	84.40	

Ground-water levels, continued.

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1952-03-18	77.80		1951-09-19	82.80	
1951-07-12	79.50		1951-06-28	78.80	
1951-05-11	76.50		1951-04-27	68.60	
1951-04-12	67.10		1951-03-30	67.20	
1951-03-15	65.10		1951-03-02	69.90	
1951-02-15	73.50				

Map ID:	85		
Agency cd:	USGS	Site no:	364531120210300
Site name:	013S015E32H002M		
Latitude:	364531	EDR Site id:	USGS3202471
Longitude:	1202103	Dec lat:	36.75856083
Dec lon:	-120.35183433	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	019
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	160.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	2.5		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	TulareBuena Vista Lakes. California. Area = 8510 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19640101
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	Not Reported	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

Map ID:	85		
Agency cd:	USGS	Site no:	364531120210101
Site name:	013S015E32H001M		
Latitude:	364531	EDR Site id:	USGS3202470
Longitude:	1202101	Dec lat:	36.75856082
Dec lon:	-120.35127876	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	019
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	160.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	2.5		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	TulareBuena Vista Lakes. California. Area = 8510 sq.mi.		
Topographic:	Not Reported		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	Not Reported	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

Map ID:	86		
Agency cd:	USGS	Site no:	364523120185901
Site name:	013S015E34J007M		
Latitude:	364523	EDR Site id:	USGS3202463
Longitude:	1201859	Dec lat:	36.75633842
Dec lon:	-120.31738877	Coor meth:	M
Coor accr:	F	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	019
Country:	US	Land net:	Not Reported
Location map:	MENDOTA DAM	Map scale:	24000
Altitude:	163.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	2.5		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	TulareBuena Vista Lakes. California. Area = 8510 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19840829
Date inventoried:	Not Reported	Mean greenwich time offset:	PST

Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	ALLUVIUM ABOVE E-CLAY		
Well depth:	224	Hole depth:	230
Source of depth data:	driller		
Project number:	Not Reported		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	1985-03-26
Water quality data end date:	1985-03-26	Water quality data count:	1
Ground water data begin date:	0000-00-00	Ground water data end date:	0000-00-00
Ground water data count:	0		

Ground-water levels, Number of Measurements: 0

Map ID:	87		
Agency cd:	USGS	Site no:	364522120222001
Site name:	013S015E31J002M		
Latitude:	364522	EDR Site id:	USGS3202461
Longitude:	1202220	Dec lat:	36.75606101
Dec lon:	-120.3732238	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	019
Country:	US	Land net:	Not Reported
Location map:	MENDOTA DAM	Map scale:	24000
Altitude:	152		
Altitude method:	Level or other surveying method		
Altitude accuracy:	.01		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	TulareBuena Vista Lakes. California. Area = 8510 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19850802
Date inventoried:	19850802	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	27	Hole depth:	27
Source of depth data:	reporting agency (generally USGS)		
Project number:	470645674		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	1985-11-05
Water quality data end date:	1988-02-23	Water quality data count:	6
Ground water data begin date:	1985-08-22	Ground water data end date:	1992-05-07
Ground water data count:	33		

Ground-water levels, Number of Measurements: 33

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1992-05-07					
Note: The site was dry (no water level recorded).					

Ground-water levels, continued.

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1991-02-07					
Note: The site was dry (no water level recorded).					
1990-02-28					
Note: The site was dry (no water level recorded).					
1989-07-27					
Note: The site was dry (no water level recorded).					
1989-06-30					
Note: The site was dry (no water level recorded).					
1989-05-25					
Note: The site was dry (no water level recorded).					
1989-04-28					
Note: The site was dry (no water level recorded).					
1989-03-23					
Note: The site was dry (no water level recorded).					
1989-02-24					
Note: The site was dry (no water level recorded).					
1989-01-24					
Note: The site was dry (no water level recorded).					
1988-04-04	23.22		1988-03-01	20.41	
1988-02-01	19.08		1988-01-01	19.88	
1987-12-01	21.29				
1987-11-01					
Note: The site was dry (no water level recorded).					
1987-10-05					
Note: The site was dry (no water level recorded).					
1987-09-01					
Note: The site was dry (no water level recorded).					
1987-08-01					
Note: The site was dry (no water level recorded).					
1987-07-01					
Note: The site was dry (no water level recorded).					
1987-06-01	22.32		1987-05-13	20.33	
1987-04-21	18.81		1987-01-01	16.5	
1986-11-01	18.5		1986-07-22	18.84	
1986-05-06	15.54		1986-02-27	16.97	
1986-01-01	14.5		1985-12-10	19.32	
1985-10-31	20.86		1985-10-16	21.19	
1985-08-22	22.20				

Map ID:	88		
Agency cd:	USGS	Site no:	364522120191001
Site name:	013S015E34K002M		
Latitude:	364522	EDR Site id:	USGS3202460
Longitude:	1201910	Dec lat:	36.75606066
Dec lon:	-120.32044441	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	019
Country:	US	Land net:	Not Reported
Location map:	MENDOTA DAM	Map scale:	24000

Altitude:	162.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5.		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	TulareBuena Vista Lakes. California. Area = 8510 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	19620830
Date inventoried:	19630627	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	257	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

Map ID:	87		
Agency cd:	USGS	Site no:	364521120222001
Site name:	013S015E31J003M		
Latitude:	364521	EDR Site id:	USGS3202458
Longitude:	1202220	Dec lat:	36.75578323
Dec lon:	-120.37322379	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	019
Country:	US	Land net:	Not Reported
Location map:	MENDOTA DAM	Map scale:	24000
Altitude:	152		
Altitude method:	Level or other surveying method		
Altitude accuracy:	1.0		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	TulareBuena Vista Lakes. California. Area = 8510 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19850723
Date inventoried:	19850723	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	415	Hole depth:	415
Source of depth data:	driller		
Project number:	470645674		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00

Peak flow data count:	0	Water quality data begin date:	1985-11-21
Water quality data end date:	1985-11-21	Water quality data count:	1
Ground water data begin date:	1985-08-22	Ground water data end date:	1992-05-07
Ground water data count:	40		

Ground-water levels, Number of Measurements: 40

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1992-05-07	98.73		1991-07-24	101.03	
1991-02-07	61.63		1990-08-15	69.15	
1990-04-20	47.00		1990-02-28	43.30	
1989-07-12	48.10		1989-06-30	42.43	
1989-05-25	40.06				
1989-04-28	37.85				
Note: The water level was affected by stage in nearby surface-water site.					
1989-03-23	63.10		1989-02-24	41.25	
1989-01-24	51.63		1988-11-22	64.21	
1988-10-26	60.47		1988-07	59.18	
1988-06	57.05		1988-05-09	37.12	
1988-04-04	56.02		1988-03	32.92	
1988-02	20.69		1988-01	21.79	
1987-12	21.78		1987-11	25.93	
1987-10-05	40.40		1987-09	40.62	
1987-08	57.89		1987-07	56.41	
1987-06	49.62		1987-05-13	42.48	
1987-01	19.1		1986-11	21.7	
1986-07-22	39.62		1986-05-06	21.25	
1986-02-27	18.19		1986-01	19.4	
1985-12-10	20.59		1985-10-31	22.93	
1985-10-16	24.76		1985-08-22	43.7	

Map ID:	90		
Agency cd:	USGS	Site no:	364521120184902
Site name:	013S015E34J002M		
Latitude:	364521	EDR Site id:	USGS3202457
Longitude:	1201849	Dec lat:	36.75578285
Dec lon:	-120.31461089	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	019
Country:	US	Land net:	Not Reported
Location map:	MENDOTA DAM	Map scale:	24000
Altitude:	165.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5.		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	TulareBuena Vista Lakes. California. Area = 8510 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	19620330
Date inventoried:	19621008	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	290	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00

Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1962-09-01	Ground water data end date:	1962-09-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1962-09-01	45.00	

Map ID:	90		
Agency cd:	USGS	Site no:	364521120184901
Site name:	013S015E34J001M		
Latitude:	364521	EDR Site id:	USGS3202456
Longitude:	1201849	Dec lat:	36.75578285
Dec lon:	-120.31461089	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	019
Country:	US	Land net:	Not Reported
Location map:	MENDOTA DAM	Map scale:	24000
Altitude:	165.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5.		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	TulareBuena Vista Lakes. California. Area = 8510 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	19620101
Date inventoried:	19621008	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	65	Hole depth:	Not Reported
Source of depth data:	reporting agency (generally USGS)		
Project number:	Not Reported		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	0000-00-00	Ground water data end date:	0000-00-00
Ground water data count:	0		

Ground-water levels, Number of Measurements: 0

GEOCHECK VERSION 2.1
STATE DATABASE WELL INFORMATION

Map ID:	87		
Agency cd:	USGS	Site no:	364520120222011
Site name:	013S015E31J012M		
Latitude:	364520	EDR Site id:	USGS3202450
Longitude:	1202220	Dec lat:	36.75550546
Dec lon:	-120.37322378	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	019
Country:	US	Land net:	Not Reported
Location map:	MENDOTA DAM	Map scale:	24000
Altitude:	153		
Altitude method:	Level or other surveying method		
Altitude accuracy:	1.0		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	TulareBuena Vista Lakes. California. Area = 8510 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19880811
Date inventoried:	19880811	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	66.83	Hole depth:	66.83
Source of depth data:	driller		
Project number:	470642800		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	1988-08-09
Water quality data end date:	1991-11-06	Water quality data count:	30
Ground water data begin date:	1988-10-26	Ground water data end date:	1992-05-07
Ground water data count:	15		

Ground-water levels, Number of Measurements: 15

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1992-05-07	53.19		1991-07-24	51.51	
1991-02-07	38.08		1990-09-15	37.59	
1990-02-28	26.86				
1989-07-12	28.62				
Note: The water level was affected by stage in nearby surface-water site.					
1989-06-30	27.99		1989-05-25	28.42	
1989-04-28	28.59		1989-03-23	30.30	
1989-02-24	28.31		1989-01-24	30.49	
1988-11-29	31.47		1988-11-22	31.65	
1988-10-26	31.04				

GEOCHECK VERSION 2.1
STATE DATABASE WELL INFORMATION

Map ID:	87		
Agency cd:	USGS	Site no:	364520120222012
Site name:	013S015E31J013M		
Latitude:	364520	EDR Site id:	USGS3202451
Longitude:	1202220	Dec lat:	36.75550546
Dec lon:	-120.37322378	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	019
Country:	US	Land net:	Not Reported
Location map:	MENDOTA DAM	Map scale:	24000
Altitude:	153		
Altitude method:	Level or other surveying method		
Altitude accuracy:	1.0		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	TulareBuena Vista Lakes. California. Area = 8510 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19880812
Date inventoried:	19880812	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	37.77	Hole depth:	37.77
Source of depth data:	driller		
Project number:	470642800		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	1988-11-29
Water quality data end date:	1988-11-29	Water quality data count:	1
Ground water data begin date:	1988-10-26	Ground water data end date:	1992-05-07
Ground water data count:	14		

Ground-water levels, Number of Measurements: 14

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1992-05-07	36.03		1991-02-07	34.74	
1990-08-15	31.42		1990-02-28	27.44	
1989-07-27	28.74		1989-06-30	28.70	
1989-05-25	29.71		1989-04-28	29.70	
1989-03-23	29.50		1989-02-24	29.91	
1989-01-24	26.26		1988-11-29	29.88	
1988-11-22	29.77		1988-10-26	29.38	

Map ID:	87		
Agency cd:	USGS	Site no:	364520120222014
Site name:	013S015E31J015M		
Latitude:	364520	EDR Site id:	USGS3202453
Longitude:	1202220	Dec lat:	36.75550546
Dec lon:	-120.37322378	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	019
Country:	US	Land net:	Not Reported
Location map:	MENDOTA DAM	Map scale:	24000

Altitude:	153		
Altitude method:	Level or other surveying method		
Altitude accuracy:	1.0		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	TulareBuena Vista Lakes. California. Area = 8510 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19880815
Date inventoried:	19880815	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	23.72	Hole depth:	23.72
Source of depth data:	driller		
Project number:	470642800		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1988-10-26	Ground water data end date:	1992-05-07
Ground water data count:	11		

Ground-water levels, Number of Measurements: 11

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1992-05-07	22.40		1991-02-07	23.16	
1990-02-28	23.13		1989-06-30	23.14	
1989-05-25	23.63				
1989-04-28	23.14				
Note: The water level was affected by stage in nearby surface-water site.					
1989-03-23	23.15		1989-02-24	23.17	
1989-01-24					
Note: The site was dry (no water level recorded).					
1988-11-22	23.07		1988-10-26	21.86	

Map ID:	87		
Agency cd:	USGS	Site no:	364520120222006
Site name:	013S015E31J007M		
Latitude:	364520	EDR Site id:	USGS3202445
Longitude:	1202220	Dec lat:	36.75550546
Dec lon:	-120.37322378	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	019
Country:	US	Land net:	Not Reported
Location map:	MENDOTA DAM	Map scale:	24000
Altitude:	152		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	2.5		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	TulareBuena Vista Lakes. California. Area = 8510 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19870408
Date inventoried:	19870408	Mean greenwich time offset:	PST

Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	57.0	Hole depth:	61.4
Source of depth data:	owner		
Project number:	470645679		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	1987-04-22
Water quality data end date:	1989-07-13	Water quality data count:	4
Ground water data begin date:	1987-04-21	Ground water data end date:	1992-05-07
Ground water data count:	31		

Ground-water levels, Number of Measurements: 31

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1992-05-07	53.37		1991-07-24	51.35	
1991-02-07	37.91		1990-08-15	37.01	
1990-02-28	26.73		1989-07-27	29.86	
1989-07-12	28.60		1989-06-30	27.96	
1989-05-25	27.82		1989-04-28	28.49	
1989-03-23	30.21		1989-02-24	28.22	
1989-01-24	30.39		1988-11-22	31.54	
1988-10-26	31.48		1988-07-01	28.66	
1988-06-01	27.52		1988-05-09	23.41	
1988-04-04	25.54		1988-03-01	20.96	
1988-02-01	18.72		1988-01-01	19.44	
1987-12-01	20.26		1987-11-01	22.48	
1987-10-05	24.83		1987-09-01	26.56	
1987-08-01	27.79		1987-07-01	26.15	
1987-06-01	23.91		1987-05-13	21.63	
1987-04-21	19.83				

Map ID:	87		
Agency cd:	USGS	Site no:	364520120222013
Site name:	013S015E31J014M		
Latitude:	364520	EDR Site id:	USGS3202452
Longitude:	1202220	Dec lat:	36.75550546
Dec lon:	-120.37322378	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	019
Country:	US	Land net:	Not Reported
Location map:	MENDOTA DAM	Map scale:	24000
Altitude:	153		
Altitude method:	Level or other surveying method		
Altitude accuracy:	1.0		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	TulareBuena Vista Lakes. California. Area = 8510 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19880812
Date inventoried:	19880812	Mean greenwich time offset:	PST

GEOCHECK VERSION 2.1
STATE DATABASE WELL INFORMATION

Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	26.67	Hole depth:	26.67
Source of depth data:	driller		
Project number:	470642800		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1988-10-26	Ground water data end date:	1992-05-07
Ground water data count:	14		

Ground-water levels, Number of Measurements: 14

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1992-05-07	26.10		1991-02-07	26.08	
1990-05-15					
Note: The site was dry (no water level recorded).					
1990-02-28	26.08		1989-07-27	26.08	
1989-06-30	26.41		1989-05-25	26.60	
1989-04-28	26.07				
1989-03-23					
Note: The site was dry (no water level recorded).					
1989-02-24					
Note: The site was dry (no water level recorded).					
1989-01-24					
Note: The site was dry (no water level recorded).					
1988-11-29					
Note: The site was dry (no water level recorded).					
1988-11-22	26.39		1988-10-26	26.25	

Map ID:	87		
Agency cd:	USGS	Site no:	364520120222008
Site name:	013S015E31J009M		
Latitude:	364520	EDR Site id:	USGS3202447
Longitude:	1202220	Dec lat:	36.75550546
Dec lon:	-120.37322378	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	019
Country:	US	Land net:	Not Reported
Location map:	MENDOTA DAM	Map scale:	24000
Altitude:	152		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	2.5		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	TulareBuena Vista Lakes. California. Area = 8510 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19870409
Date inventoried:	19870608	Mean greenwich time offset:	PST

GEOCHECK VERSION 2.1
STATE DATABASE WELL INFORMATION

Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	40.7	Hole depth:	40.7
Source of depth data:	owner		
Project number:	470645672		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	1987-04-22
Water quality data end date:	1988-02-23	Water quality data count:	2
Ground water data begin date:	1987-04-21	Ground water data end date:	1992-05-07
Ground water data count:	31		

Ground-water levels, Number of Measurements: 31

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1992-05-07					
Note: The site was dry (no water level recorded).					
1991-07-24	37.39		1991-02-07	34.40	
1990-08-15	31.10		1990-02-28	27.02	
1989-07-27	28.32		1989-07-12	28.27	
1989-06-30	28.32		1989-05-25	28.89	
1989-04-28	29.35		1989-03-23	29.14	
1989-02-24	29.53		1989-01-24	29.96	
1988-11-22	29.44		1988-10-26	29.28	
1988-07-01	26.17		1988-06-01	25.28	
1988-05-09	23.51		1988-04-04	23.10	
1988-03-01	20.52		1988-02-01	19.09	
1988-01-01	19.88		1987-12-01	21.35	
1987-11-01	24.20		1987-10-01	25.10	
1987-09-01	25.99		1987-08-01	25.47	
1987-07-01	24.07		1987-06-01	22.27	
1987-05-13	20.24		1987-04-21	18.30	

Map ID:	87		
Agency cd:	USGS	Site no:	364520120222015
Site name:	013S015E31J016M		
Latitude:	364520	EDR Site id:	USGS3202454
Longitude:	1202220	Dec lat:	36.75550546
Dec lon:	-120.37322378	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	019
Country:	US	Land net:	Not Reported
Location map:	MENDOTA DAM	Map scale:	24000
Altitude:	164		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	2.5		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	TulareBuena Vista Lakes. California. Area = 8510 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19900815
Date inventoried:	19900815	Mean greenwich time offset:	PST

Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	66.92	Hole depth:	70
Source of depth data:	geologist		
Project number:	Not Reported		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	1990-08-23
Water quality data end date:	1990-08-30	Water quality data count:	4
Ground water data begin date:	0000-00-00	Ground water data end date:	0000-00-00
Ground water data count:	0		

Ground-water levels, Number of Measurements: 0

Map ID:	87		
Agency cd:	USGS	Site no:	364520120222001
Site name:	013S015E31J004M		
Latitude:	364520	EDR Site id:	USGS3202444
Longitude:	1202220	Dec lat:	36.75550546
Dec lon:	-120.37322378	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	019
Country:	US	Land net:	Not Reported
Location map:	MENDOTA DAM	Map scale:	24000
Altitude:	153		
Altitude method:	Level or other surveying method		
Altitude accuracy:	1.0		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	TulareBuena Vista Lakes. California. Area = 8510 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19850716
Date inventoried:	19850716	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	70	Hole depth:	70
Source of depth data:	driller		
Project number:	470645674		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	1985-11-21
Water quality data end date:	1987-04-23	Water quality data count:	2
Ground water data begin date:	1985-08-22	Ground water data end date:	1992-05-07
Ground water data count:	42		

Ground-water levels, Number of Measurements: 42

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1992-05-07	54.42		1991-07-24	51.46	

Ground-water levels, continued.

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1991-02-07	38.00		1990-08-15	37.48	
1990-04-20	29.63		1990-02-28	26.78	
1989-07-27	29.92		1989-07-12	28.67	
1989-06-30	28.01		1989-05-25	27.85	
1989-04-28	28.52		1989-03-23	30.23	
1989-02-24	28.26		1989-01-24	30.43	
1988-11-22	31.14		1988-10-26	31.53	
1988-07	28.70		1988-06	27.59	
1988-05-09	23.45		1988-04-04	25.61	
1988-03	21.02		1988-02	18.76	
1988-01	19.53		1987-12	20.30	
1987-11	22.55		1987-10-05	24.92	
1987-09	26.64		1987-08	27.87	
1987-07	26.21		1987-06	23.98	
1987-05-13	21.70		1987-04-21	19.75	
1987-01	16.6		1986-11	18.3	
1986-07-22	20.44		1986-05-06	15.87	
1986-02-27	16.71		1986-01	17.6	
1985-12-10	18.19		1985-10-31	19.79	
1985-10-16	20.57		1985-08-22	23.60	

Map ID:	87		
Agency cd:	USGS	Site no:	364520120222010
Site name:	013S015E31J011M		
Latitude:	364520	EDR Site id:	USGS3202449
Longitude:	1202220	Dec lat:	36.75550546
Dec lon:	-120.37322378	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	019
Country:	US	Land net:	Not Reported
Location map:	MENDOTA DAM	Map scale:	24000
Altitude:	152		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	2.5		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	TulareBuena Vista Lakes. California. Area = 8510 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19870410
Date inventoried:	19870410	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	47.0	Hole depth:	47.0
Source of depth data:	owner		
Project number:	470645679		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00

Peak flow data count:	0	Water quality data begin date:	1987-04-22
Water quality data end date:	1988-02-24	Water quality data count:	2
Ground water data begin date:	1987-04-21	Ground water data end date:	1992-05-07
Ground water data count:	30		

Ground-water levels, Number of Measurements: 30

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1992-05-07	46.30		1991-07-24	44.21	
1991-02-07	35.77		1990-08-15	33.16	
1990-02-28	27.40		1989-07-27	29.17	
1989-07-12	28.75		1989-06-30	28.68	
1989-05-25	29.09		1989-04-28	29.59	
1989-03-23	29.78		1989-02-24	29.73	
1988-11-22	30.18		1988-10-26	29.84	
1988-07-01	26.92		1988-06-01	26.00	
1988-05-09	23.96		1988-04-04	23.89	
1988-03-01	20.95		1988-02-01	19.46	
1988-01-01	20.24		1987-12-01	21.50	
1987-11-01	24.17		1987-10-05	25.56	
1987-09-01	26.64		1987-08-01	26.39	
1987-07-01	24.98		1987-06-01	23.05	
1987-05-13	21.00		1987-04-21	18.69	

Map ID:	87		
Agency cd:	USGS	Site no:	364520120222007
Site name:	013S015E31J008M		
Latitude:	364520	EDR Site id:	USGS3202446
Longitude:	1202220	Dec lat:	36.75550546
Dec lon:	-120.37322378	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	019
Country:	US	Land net:	Not Reported
Location map:	MENDOTA DAM	Map scale:	24000
Altitude:	152		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	2.5		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	TulareBuena Vista Lakes. California. Area = 8510 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19870409
Date inventoried:	19870409	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	51.0	Hole depth:	51.0
Source of depth data:	owner		
Project number:	470645679		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00

Peak flow data count:	0	Water quality data begin date:	1987-04-23
Water quality data end date:	1988-02-23	Water quality data count:	2
Ground water data begin date:	1987-04-21	Ground water data end date:	1992-05-07
Ground water data count:	31		

Ground-water levels, Number of Measurements: 31

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1992-05-07	50.20		1991-07-24	50.97	
1991-02-07	37.78		1990-08-15	37.00	
1990-02-28	27.05		1989-07-27	29.95	
1989-07-12	28.78		1989-06-30	28.23	
1989-05-25	28.15		1989-04-28	28.81	
1989-03-23	30.29		1989-02-24	28.59	
1989-01-24	30.50		1988-11-22	31.65	
1988-10-26	31.57		1988-07-01	28.73	
1988-06-01	27.59		1988-05-09	23.73	
1988-04-04	25.62		1988-03-01	21.22	
1988-02-01	19.01		1988-01-01	19.77	
1987-12-01	20.62		1987-11-01	22.90	
1987-10-01	25.10		1987-09-01	26.69	
1987-08-01	27.70		1987-07-01	26.08	
1987-06-01	23.95		1987-05-13	21.70	
1987-04-21	19.64				

Map ID:	87		
Agency cd:	USGS	Site no:	364520120222009
Site name:	013S015E31J010M		
Latitude:	364520	EDR Site id:	USGS3202448
Longitude:	1202220	Dec lat:	36.75550546
Dec lon:	-120.37322378	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	019
Country:	US	Land net:	Not Reported
Location map:	MENDOTA DAM	Map scale:	24000
Altitude:	152		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	2.5		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	TulareBuena Vista Lakes. California. Area = 8510 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19870409
Date inventoried:	19870409	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	34.5	Hole depth:	35.0
Source of depth data:	owner		
Project number:	470645672		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00

Peak flow data count:	0	Water quality data begin date:	1987-04-22
Water quality data end date:	1988-02-23	Water quality data count:	2
Ground water data begin date:	1987-04-21	Ground water data end date:	1992-05-07
Ground water data count:	30		

Ground-water levels, Number of Measurements: 30

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1992-05-07					
Note: The site was dry (no water level recorded).					
1991-02-07					
Note: The site was dry (no water level recorded).					
1990-08-15	31.39		1990-04-20	28.36	
1990-02-28	27.37		1989-07-27	28.66	
1989-07-12	28.57		1989-06-30	28.63	
1989-05-25	29.20		1989-04-28	29.63	
1989-03-23	29.43		1989-02-24	29.83	
1989-01-24	30.24		1988-11-22	29.73	
1988-10-26	29.38		1988-07	26.41	
1988-06	25.51		1988-05-09	23.80	
1988-04-04	23.34		1988-03	20.67	
1988-02	19.33		1988-01	20.11	
1987-12	21.62		1987-11	24.51	
1987-10-05	25.48		1987-09	26.26	
1987-07	24.35		1987-06	22.49	
1987-05-13	20.53		1987-04-21	18.78	

Map ID:	91		
Agency cd:	USGS	Site no:	364519120225101
Site name:	013S015E31M002M		
Latitude:	364519	EDR Site id:	USGS3202442
Longitude:	1202251	Dec lat:	36.75522774
Dec lon:	-120.38183515	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	019
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	170.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	2.5		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Middle San JoaquinLower Chowchilla. California. Area = 2640 sq.mi.		
Topographic:	Not Reported		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	Not Reported	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported

Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

Map ID:	87		
Agency cd:	USGS	Site no:	364519120222001
Site name:	013S015E31J005M		
Latitude:	364519	EDR Site id:	USGS3202441
Longitude:	1202220	Dec lat:	36.75522769
Dec lon:	-120.37322377	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	019
Country:	US	Land net:	Not Reported
Location map:	MENDOTA DAM	Map scale:	24000
Altitude:	153		
Altitude method:	Level or other surveying method		
Altitude accuracy:	1.0		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	TulareBuena Vista Lakes. California. Area = 8510 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19850716
Date inventoried:	19850716	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	260	Hole depth:	260
Source of depth data:	driller		
Project number:	470645674		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	1985-11-20
Water quality data end date:	1991-11-06	Water quality data count:	3
Ground water data begin date:	1985-08-22	Ground water data end date:	1992-05-07
Ground water data count:	41		

Ground-water levels, Number of Measurements: 41

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1992-05-07	84.84		1991-07-24	77.93	
1991-02-07	50.30		1990-08-15	54.31	
1990-04-20	38.72		1990-02-28	33.89	
1989-07-27	43.64		1989-07-12	39.47	
1989-06-30	36.29		1989-05-25	35.58	
1989-04-28	33.32		1989-03-23	48.96	
1989-02-24	35.37		1989-01-24	42.45	
1988-11-22	49.64		1988-10-26	49.08	
1988-07	47.25		1988-06	46.36	
1988-05-09	30.96		1988-04-04	43.86	
1988-03	29.44		1988-02	20.24	

Ground-water levels, continued.

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1988-01	20.35		1987-12	20.82	
1987-11	23.78		1987-10-05	33.27	
1987-09	35.49		1987-08	47.01	
1987-07	44.67		1987-06	41.19	
1987-05-13	36.01		1987-01	17.6	
1986-11	21.3		1986-07-22	32.86	
1986-05-06	19.98		1986-02-27	17.29	
1986-01	18.5		1985-12-10	19.44	
1985-10-31	21.41		1985-10-16	22.71	
1985-08-22	35.2				

Map ID:	87		
Agency cd:	USGS	Site no:	364518120222001
Site name:	013S015E31J006M		
Latitude:	364518	EDR Site id:	USGS3202438
Longitude:	1202220	Dec lat:	36.75494991
Dec lon:	-120.37322376	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	019
Country:	US	Land net:	Not Reported
Location map:	MENDOTA DAM	Map scale:	24000
Altitude:	152		
Altitude method:	Level or other surveying method		
Altitude accuracy:	1.0		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	TulareBuena Vista Lakes. California. Area = 8510 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19850715
Date inventoried:	19850715	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	495	Hole depth:	500
Source of depth data:	driller		
Project number:	470645674		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	1985-11-25
Water quality data end date:	1985-11-25	Water quality data count:	1
Ground water data begin date:	1985-08-22	Ground water data end date:	1992-05-07
Ground water data count:	42		

Ground-water levels, Number of Measurements: 42

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1992-05-07	94.38		1991-07-24	125.97	
1991-02-07	107.32		1990-08-15	101.52	
1990-04-20	85.21		1990-02-28	81.23	

Ground-water levels, continued.

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1989-07-27	88.47		1989-07-12	86.01	
1989-06-30	84.11		1989-05-25	80.52	
1989-04-28	79.72		1989-03-23	76.70	
1989-02-24	75.12		1989-01-24	76.35	
1988-11-22	80.53		1988-10-26	82.50	
1988-07	76.84		1988-06	73.95	
1988-05-09	73.81		1988-04-04	72.48	
1988-03	70.33		1988-02	70.93	
1988-01	72.67		1987-12	75.04	
1987-11	77.08		1987-10-05	78.63	
1987-09	79.39		1987-08	77.97	
1987-07	75.16		1987-06	73.29	
1987-05-13	72.60		1987-01	75.4	
1986-11	78.4		1986-07-22	78.25	
1986-05-06	77.66		1986-02-17	78.29	
1986-01	79.9		1985-12-10	83.37	
1985-10-31	87.27		1985-10-16	88.78	
1985-08-24	91.9		1985-08-22	90.6	

Map ID:	92		
Agency cd:	USGS	Site no:	364515120210701
Site name:	013S015E32J001M		
Latitude:	364515	EDR Site id:	USGS3202435
Longitude:	1202107	Dec lat:	36.75411646
Dec lon:	-120.35294534	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	019
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	160.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	2.5		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	TulareBuena Vista Lakes. California. Area = 8510 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	Not Reported	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

Map ID:	94		
Agency cd:	USGS	Site no:	364514120191001
Site name:	013S015E34K001M		
Latitude:	364514	EDR Site id:	USGS3202434
Longitude:	1201910	Dec lat:	36.75383847
Dec lon:	-120.32044435	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	019
Country:	US	Land net:	Not Reported
Location map:	MENDOTA DAM	Map scale:	24000
Altitude:	162.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5.		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	TulareBuena Vista Lakes. California. Area = 8510 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	1963
Date inventoried:	19630627	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	380	Hole depth:	Not Reported
Source of depth data:	other reported		
Project number:	Not Reported		
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

Map ID:	95		
Agency cd:	USGS	Site no:	364512120220701
Site name:	013S015E31J001M		
Latitude:	364512	EDR Site id:	USGS3202431
Longitude:	1202207	Dec lat:	36.75328325
Dec lon:	-120.36961249	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	019
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	163.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	2.5		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	TulareBuena Vista Lakes. California. Area = 8510 sq.mi.		
Topographic:	Not Reported		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	Not Reported	Mean greenwich time offset:	PST

Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	Not Reported	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

Map ID:	97		
Agency cd:	USGS	Site no:	364508120221601
Site name:	013S015E31R001M		
Latitude:	364508	EDR Site id:	USGS3202425
Longitude:	1202216	Dec lat:	36.75217217
Dec lon:	-120.37211254	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	019
Country:	US	Land net:	NESESES31 T13S R15E M
Location map:	MENDOTA DAM	Map scale:	24000
Altitude:	164.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5.		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	TulareBuena Vista Lakes. California. Area = 8510 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	19510906	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	Not Reported	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

Map ID:	94		
Agency cd:	USGS	Site no:	364507120191001
Site name:	013S015E34Q001M		
Latitude:	364507	EDR Site id:	USGS3202597
Longitude:	1201910	Dec lat:	36.75189406
Dec lon:	-120.32044429	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	019
Country:	US	Land net:	Not Reported
Location map:	MENDOTA DAM	Map scale:	24000
Altitude:	160.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	2.5		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	TulareBuena Vista Lakes. California. Area = 8510 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	19620828
Date inventoried:	19630627	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	ALLUVIUM ABOVE E-CLAY		
Well depth:	255	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	1962-10-11
Water quality data end date:	1962-10-11	Water quality data count:	1
Ground water data begin date:	0000-00-00	Ground water data end date:	0000-00-00
Ground water data count:	0		

Ground-water levels, Number of Measurements: 0

Map ID:	98		
Agency cd:	USGS	Site no:	364500120220001
Site name:	013S015E32N001M		
Latitude:	364500	EDR Site id:	USGS3202584
Longitude:	1202200	Dec lat:	36.74994996
Dec lon:	-120.36766789	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	019
Country:	US	Land net:	SWSWSWS32 T13S R15E M
Location map:	TRANQUILLITY	Map scale:	24000
Altitude:	163.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5.		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	TulareBuena Vista Lakes. California. Area = 8510 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	19510906	Mean greenwich time offset:	PST

Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	Not Reported	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

Map ID:	100		
Agency cd:	USGS	Site no:	364456120211301
Site name:	014S015E05A001M		
Latitude:	364456	EDR Site id:	USGS3202549
Longitude:	1202113	Dec lat:	36.74883876
Dec lon:	-120.35461189	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	019
Country:	US	Land net:	NWNENES05 T14S R15E M
Location map:	TRANQUILLITY	Map scale:	24000
Altitude:	160.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5.		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	TulareBuena Vista Lakes. California. Area = 8510 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19550331
Date inventoried:	19560608	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	265	Hole depth:	Not Reported
Source of depth data:	other reported		
Project number:	Not Reported		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1960-05-01	Ground water data end date:	1960-05-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1960-05-01	42.00	

Map ID:	99		
Agency cd:	USGS	Site no:	364456120210501
Site name:	014S015E05A002M		
Latitude:	364456	EDR Site id:	USGS3202548
Longitude:	1202105	Dec lat:	36.74883875
Dec lon:	-120.3523896	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	019
Country:	US	Land net:	NENENES05 T14S R15E M
Location map:	TRANQUILLITY	Map scale:	24000
Altitude:	160.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5.		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	TulareBuena Vista Lakes. California. Area = 8510 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19550101
Date inventoried:	19560608	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	276	Hole depth:	Not Reported
Source of depth data:	other reported		
Project number:	Not Reported		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1960-05-01	Ground water data end date:	1960-05-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1960-05-01	36.00	

Map ID:	102		
Agency cd:	USGS	Site no:	364454120180201
Site name:	014S015E03B001M		
Latitude:	364454	EDR Site id:	USGS3202541
Longitude:	1201802	Dec lat:	36.74828286
Dec lon:	-120.3015547	Coor meth:	M
Coor accr:	M	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	019
Country:	US	Land net:	NWS03 T14S R15E M
Location map:	TRANQUILLITY	Map scale:	24000
Altitude:	160.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	2		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	TulareBuena Vista Lakes. California. Area = 8510 sq.mi.		
Topographic:	Not Reported		
Site type:	Ground-water other than Spring	Date construction:	19620823
Date inventoried:	19630627	Mean greenwich time offset:	PST

Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	195	Hole depth:	Not Reported
Source of depth data:	other reported		
Project number:	Not Reported		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1963-10-07	Ground water data end date:	1963-10-07
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1963-10-07	40.20	

Map ID:	99		
Agency cd:	USGS	Site no:	364452120210301
Site name:	014S015E05A003M		
Latitude:	364452	EDR Site id:	USGS3202540
Longitude:	1202103	Dec lat:	36.74772764
Dec lon:	-120.35183399	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	019
Country:	US	Land net:	NENENES05 T14S R15E M
Location map:	TRANQUILLITY	Map scale:	24000
Altitude:	160.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5.		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	TulareBuena Vista Lakes. California. Area = 8510 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19550326
Date inventoried:	19560608	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	ALLUVIUM ABOVE E-CLAY		
Well depth:	247	Hole depth:	Not Reported
Source of depth data:	other reported		
Project number:	Not Reported		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	1968-09-11
Water quality data end date:	1968-09-11	Water quality data count:	1
Ground water data begin date:	1960-05-01	Ground water data end date:	1960-05-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1960-05-01	44.00	

Map ID:	99		
Agency cd:	USGS	Site no:	364448120210301
Site name:	014S015E05A004M		
Latitude:	364448	EDR Site id:	USGS3202536
Longitude:	1202103	Dec lat:	36.74661653
Dec lon:	-120.35183394	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	019
Country:	US	Land net:	SENENES05 T14S R15E M
Location map:	TRANQUILLITY	Map scale:	24000
Altitude:	160.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5.		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	TulareBuena Vista Lakes. California. Area = 8510 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19550311
Date inventoried:	19560608	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	242	Hole depth:	Not Reported
Source of depth data:	other reported		
Project number:	Not Reported		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1960-05-01	Ground water data end date:	1960-05-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1960-05-01	44.00	

Map ID:	99		
Agency cd:	USGS	Site no:	364445120210201
Site name:	014S015E05A005M		
Latitude:	364445	EDR Site id:	USGS3202533
Longitude:	1202102	Dec lat:	36.7457832
Dec lon:	-120.35155612	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	019
Country:	US	Land net:	SENENES05 T14S R15E M
Location map:	TRANQUILLITY	Map scale:	24000
Altitude:	160.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5.		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	TulareBuena Vista Lakes. California. Area = 8510 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19550307
Date inventoried:	19560608	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	240	Hole depth:	Not Reported
Source of depth data:	other reported		
Project number:	Not Reported		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1960-05-01	Ground water data end date:	1960-05-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1960-05-01	42.00	

Map ID:	104		
Agency cd:	USGS	Site no:	364443120175701
Site name:	014S015E03H001M		
Latitude:	364443	EDR Site id:	USGS3202530
Longitude:	1201757	Dec lat:	36.74522732
Dec lon:	-120.30016563	Coor meth:	M
Coor accr:	M	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	019
Country:	US	Land net:	S03 T14S R15E M
Location map:	TRANQUILLITY	Map scale:	24000
Altitude:	165.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	2		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	TulareBuena Vista Lakes. California. Area = 8510 sq.mi.		
Topographic:	Not Reported		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	19630305	Mean greenwich time offset:	PST

Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	480	Hole depth:	Not Reported
Source of depth data:	other reported		
Project number:	Not Reported		
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

Map ID:	105		
Agency cd:	USGS	Site no:	364436120215601
Site name:	014S015E05E002M		
Latitude:	364436	EDR Site id:	USGS3202520
Longitude:	1202156	Dec lat:	36.74328331
Dec lon:	-120.36655648	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	019
Country:	US	Land net:	SWSWNWS05 T14S R15E M
Location map:	TRANQUILLITY	Map scale:	24000
Altitude:	163.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	2.5		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	TulareBuena Vista Lakes. California. Area = 8510 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	19850208	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	Not Reported	Hole depth:	16.5
Source of depth data:	reporting agency (generally USGS)		
Project number:	Not Reported		
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

GEOCHECK VERSION 2.1
STATE DATABASE WELL INFORMATION

Water Well Information:

Longitude:	-120.3761
Latiude:	36.8111
Stwellno:	13S15E07K001M
Districtco:	8
Welluseco:	Z
Countyco:	20
Gwcode:	502207
Site id:	CADW40000033126

Longitude:	-120.3761
Latiude:	36.8111
Stwellno:	13S15E07K002M
Districtco:	8
Welluseco:	Z
Countyco:	20
Gwcode:	502207
Site id:	CADW40000033127

Longitude:	-120.35
Latiude:	36.8056
Stwellno:	13S15E17A001M
Districtco:	8
Welluseco:	Z
Countyco:	20
Gwcode:	502207
Site id:	CADW40000033061

Longitude:	-120.35
Latiude:	36.8056
Stwellno:	13S15E17A002M
Districtco:	8
Welluseco:	Z
Countyco:	20
Gwcode:	502207
Site id:	CADW40000033062

Longitude:	-120.3097
Latiude:	36.8031
Stwellno:	13S15E14E002M
Districtco:	8
Welluseco:	Z
Countyco:	20
Gwcode:	502207
Site id:	CADW40000033050

Longitude:	-120.3092
Latiude:	36.7986
Stwellno:	13S15E14M001M
Districtco:	8
Welluseco:	Z
Countyco:	20
Gwcode:	502207
Site id:	CADW40000033015

Longitude:	-120.3825
Latiude:	36.7983
Stwellno:	13S15E18M001M
Districtco:	8
Welluseco:	Z
Countyco:	10
Gwcode:	502207
Site id:	CADW40000033013

Longitude:	-120.3689
Latiude:	36.7967
Stwellno:	13S15E18J001M
Districtco:	8
Welluseco:	Z
Countyco:	10
Gwcode:	502207
Site id:	CADW40000033009

Longitude:	-120.3086
Latiude:	36.7944
Stwellno:	13S15E14N001M
Districtco:	8
Welluseco:	Z
Countyco:	20
Gwcode:	502207
Site id:	CADW40000033000

Longitude:	-120.3081
Latiude:	36.7939
Stwellno:	13S15E14P002M
Districtco:	8
Welluseco:	Z
Countyco:	20
Gwcode:	502207
Site id:	CADW40000032994

Longitude:	-120.2883
Latiude:	36.7931
Stwellno:	13S15E24C001M
Districtco:	8
Welluseco:	Z
Countyco:	20
Gwcode:	502207
Site id:	CADW40000032972

Longitude:	-120.3894
Latiude:	36.7908
Stwellno:	13S14E24A001M
Districtco:	8
Welluseco:	Z
Countyco:	10
Gwcode:	502207
Site id:	CADW40000032949

Longitude:	-120.3631
Latiude:	36.7897
Stwellno:	13S15E20D001M
Districtco:	8
Welluseco:	Z
Countyco:	20
Gwcode:	502207
Site id:	CADW40000032944

Longitude:	-120.3569
Latiude:	36.7883
Stwellno:	13S15E20G002M
Districtco:	8
Welluseco:	Z
Countyco:	10
Gwcode:	502207
Site id:	CADW40000032935

Longitude:	-120.3556
Latiude:	36.7883
Stwellno:	13S15E20G001M
Districtco:	8
Welluseco:	Z
Countyco:	10
Gwcode:	502207
Site id:	CADW40000032934

Longitude:	-120.3592
Latiude:	36.7853
Stwellno:	13S15E20L001M
Districtco:	8
Welluseco:	Z
Countyco:	20
Gwcode:	502207
Site id:	CADW40000032918

Longitude:	-120.3803
Latiude:	36.7836
Stwellno:	13S15E19L001M
Districtco:	8
Welluseco:	Z
Countyco:	10
Gwcode:	502207
Site id:	CADW40000032911

Longitude:	-120.3367
Latiude:	36.7825
Stwellno:	13S15E21K001M
Districtco:	8
Welluseco:	Z
Countyco:	10
Gwcode:	502207
Site id:	CADW40000032903

Longitude:	-120.2703
Latiude:	36.7814
Stwellno:	13S16E19P001M
Districtco:	8
Welluseco:	Z
Countyco:	20
Gwcode:	502206
Site id:	CADW40000032894

Longitude:	-120.3061
Latiude:	36.7811
Stwellno:	13S15E23P001M
Districtco:	8
Welluseco:	Z
Countyco:	20
Gwcode:	502207
Site id:	CADW40000032889

Longitude:	-120.3367
Latiude:	36.7808
Stwellno:	13S15E21Q001M
Districtco:	8
Welluseco:	Z
Countyco:	20
Gwcode:	502207
Site id:	CADW40000032885

Longitude:	-120.3708
Latiude:	36.7806
Stwellno:	13S15E19R001M
Districtco:	8
Welluseco:	Z
Countyco:	10
Gwcode:	502207
Site id:	CADW40000032883

Longitude:	-120.3858
Latiude:	36.78
Stwellno:	13S14E24R001M
Districtco:	8
Welluseco:	Z
Countyco:	10
Gwcode:	502207
Site id:	CADW40000032880

Longitude:	-120.3719
Latiude:	36.7797
Stwellno:	13S15E19Q001M
Districtco:	8
Welluseco:	Z
Countyco:	10
Gwcode:	502207
Site id:	CADW40000032877

Longitude:	-120.3714
Latiude:	36.7772
Stwellno:	13S15E30B007M
Districtco:	8
Welluseco:	Z
Countyco:	10
Gwcode:	502207
Site id:	CADW40000032817

Longitude:	-120.3222
Latiude:	36.7769
Stwellno:	13S15E27C001M
Districtco:	8
Welluseco:	Z
Countyco:	10
Gwcode:	502207
Site id:	CADW40000032816

Longitude:	-120.3014
Latiude:	36.7769
Stwellno:	13S15E26B001M
Districtco:	8
Welluseco:	Z
Countyco:	20
Gwcode:	502207
Site id:	CADW40000032815

Longitude:	-120.3753
Latiude:	36.7761
Stwellno:	13S15E30C001M
Districtco:	8
Welluseco:	Z
Countyco:	10
Gwcode:	502207
Site id:	CADW40000032814

Longitude:	-120.2644
Latiude:	36.7756
Stwellno:	13S16E30B001M
Districtco:	8
Welluseco:	Z
Countyco:	20
Gwcode:	502206
Site id:	CADW40000032810

GEOCHECK VERSION 2.1
STATE DATABASE WELL INFORMATION

Longitude:	-120.2644
Latiude:	36.7756
Stwellno:	13S16E30B002M
Districtco:	8
Welluseco:	Z
Countyco:	20
Gwcode:	502206
Site id:	CADW40000032811

GEOCHECK VERSION 2.1
STATE DATABASE WELL INFORMATION

Water Wells:

Water System Information:

Map ID:	51		
Prime Station Code:	13S/15E-30B04 M	User ID:	AGE
FRDS Number:	1010021003	County:	Fresno
District Number:	11	Station Type:	WELL/AMBNT/MUN/INTAKE
Water Type:	Well/Groundwater	Well Status:	Active Raw
Source Lat/Long:	364632.0 1202224.0	Precision:	1,000 Feet (10 Seconds)
Source Name:	WELL 03		
System Number:	1010021		
System Name:	CITY OF MENDOTA		
Organization That Operates System:			
	643 QUINCE STREET		
	MENDOTA 93640		
Pop Served:	11000	Connections:	1362
Area Served:	MENDOTA		
Sample Collected:	05/11/2007	Findings:	94. PCI/L
Chemical:	GROSS ALPHA		
Sample Collected:	05/11/2007	Findings:	0.84 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	07/02/2007	Findings:	0.268 PCI/L
Chemical:	RADIUM 226 COUNTING ERROR		
Sample Collected:	07/02/2007	Findings:	0.425 PCI/L
Chemical:	RADIUM 226 MDA95		
Sample Collected:	07/02/2007	Findings:	4. PCI/L
Chemical:	GROSS ALPHA		
Sample Collected:	07/02/2007	Findings:	0.24 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	07/02/2007	Findings:	1.41 PCI/L
Chemical:	GROSS BETA COUNTING ERROR		
Sample Collected:	07/02/2007	Findings:	0.28 PCI/L
Chemical:	RADIUM 228 COUNTING ERROR		
Sample Collected:	07/02/2007	Findings:	1. PCI/L
Chemical:	RADIUM 228 MDA95		
Sample Collected:	10/10/2007	Findings:	0.22 PCI/L
Chemical:	RADIUM 226 COUNTING ERROR		
Sample Collected:	10/10/2007	Findings:	0.346 PCI/L
Chemical:	RADIUM 226 MDA95		
Sample Collected:	10/10/2007	Findings:	3.2 PCI/L
Chemical:	GROSS ALPHA		
Sample Collected:	10/10/2007	Findings:	0.19 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	10/10/2007	Findings:	1.09 PCI/L
Chemical:	GROSS BETA COUNTING ERROR		

Sample Collected:	10/10/2007	Findings:	0.43 PCI/L
Chemical:	RADIUM 228 COUNTING ERROR		
Sample Collected:	10/10/2007	Findings:	1. PCI/L
Chemical:	RADIUM 228 MDA95		
Sample Collected:	01/09/2008	Findings:	0.304 PCI/L
Chemical:	RADIUM 226 COUNTING ERROR		
Sample Collected:	01/09/2008	Findings:	0.477 PCI/L
Chemical:	RADIUM 226 MDA95		
Sample Collected:	01/09/2008	Findings:	0.23 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	01/09/2008	Findings:	1.06 PCI/L
Chemical:	GROSS BETA COUNTING ERROR		
Sample Collected:	01/09/2008	Findings:	0.34 PCI/L
Chemical:	RADIUM 228 COUNTING ERROR		
Sample Collected:	01/09/2008	Findings:	1. PCI/L
Chemical:	RADIUM 228 MDA95		
Sample Collected:	11/01/2010	Findings:	15. UNITS
Chemical:	COLOR		
Sample Collected:	11/01/2010	Findings:	3300. US
Chemical:	SPECIFIC CONDUCTANCE		
Sample Collected:	11/01/2010	Findings:	7.9
Chemical:	PH, LABORATORY		
Sample Collected:	11/01/2010	Findings:	212. MG/L
Chemical:	ALKALINITY (TOTAL) AS CACO3		
Sample Collected:	11/01/2010	Findings:	206. MG/L
Chemical:	BICARBONATE ALKALINITY		
Sample Collected:	11/01/2010	Findings:	356. MG/L
Chemical:	HARDNESS (TOTAL) AS CACO3		
Sample Collected:	11/01/2010	Findings:	72. MG/L
Chemical:	CALCIUM		
Sample Collected:	11/01/2010	Findings:	20. MG/L
Chemical:	MAGNESIUM		
Sample Collected:	11/01/2010	Findings:	580. MG/L
Chemical:	SODIUM		
Sample Collected:	11/01/2010	Findings:	5. MG/L
Chemical:	POTASSIUM		
Sample Collected:	11/01/2010	Findings:	460. MG/L
Chemical:	CHLORIDE		
Sample Collected:	11/01/2010	Findings:	690. MG/L
Chemical:	SULFATE		
Sample Collected:	11/01/2010	Findings:	0.19 MG/L
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)		
Sample Collected:	11/01/2010	Findings:	2.3 UG/L
Chemical:	ARSENIC		

Sample Collected:	11/01/2010	Findings:	670. UG/L
Chemical:	IRON		
Sample Collected:	11/01/2010	Findings:	655. UG/L
Chemical:	MANGANESE		
Sample Collected:	11/01/2010	Findings:	159. UG/L
Chemical:	ZINC		
Sample Collected:	11/01/2010	Findings:	7.4 UG/L
Chemical:	SELENIUM		
Sample Collected:	11/01/2010	Findings:	1900. MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	11/01/2010	Findings:	0.37
Chemical:	LANGELIER INDEX AT SOURCE TEMP.		
Sample Collected:	11/01/2010	Findings:	3. NTU
Chemical:	TURBIDITY, LABORATORY		

Longitude:	-120.2792
Latiude:	36.7753
Stwellno:	13S15E25A002M
Districtco:	8
Welluseco:	Z
Countyco:	20
Gwcode:	502207
Site id:	CADW40000032805

Water System Information:

Map ID:	51		
Prime Station Code:	13S/15E-30B08 M	User ID:	AGE
FRDS Number:	1010021004	County:	Fresno
District Number:	11	Station Type:	WELL/AMBNT
Water Type:	Well/Groundwater	Well Status:	Active Raw
Source Lat/Long:	364631.0 1202225.0	Precision:	1,000 Feet (10 Seconds)
Source Name:	WELL 04		
System Number:	1010021		
System Name:	CITY OF MENDOTA		
Organization That Operates System:			
	643 QUINCE STREET		
	MENDOTA 93640		
Pop Served:	11000	Connections:	1362
Area Served:	MENDOTA		
Sample Collected:	05/04/2001	Findings:	260. MG/L
Chemical:	BICARBONATE ALKALINITY		

Longitude:	-120.2867
Latiude:	36.7739
Stwellno:	13S15E25F001M
Districtco:	8
Welluseco:	Z
Countyco:	20
Gwcode:	502207
Site id:	CADW40000032800

Longitude:	-120.3325
Latiude:	36.7736
Stwellno:	13S15E28H001M
Districtco:	8
Welluseco:	Z
Countyco:	10
Gwcode:	502207
Site id:	CADW40000032798

Longitude:	-120.3219
Latiude:	36.7736
Stwellno:	13S15E27F001M
Districtco:	8
Welluseco:	Z
Countyco:	10
Gwcode:	502207
Site id:	CADW40000032797

Longitude:	-120.3039
Latiude:	36.7731
Stwellno:	13S15E26G001M
Districtco:	8
Welluseco:	Z
Countyco:	20
Gwcode:	502207
Site id:	CADW40000032794

Longitude:	-120.2722
Latiude:	36.7731
Stwellno:	13S16E30E001M
Districtco:	8
Welluseco:	Z
Countyco:	10
Gwcode:	502208
Site id:	CADW40000032793

Longitude:	-120.2992
Latiude:	36.7719
Stwellno:	13S15E26H001M
Districtco:	8
Welluseco:	Z
Countyco:	20
Gwcode:	502207
Site id:	CADW40000032788

Longitude:	-120.3361
Latiude:	36.7711
Stwellno:	13S15E28G001M
Districtco:	8
Welluseco:	Z
Countyco:	10
Gwcode:	502207
Site id:	CADW40000032778

Longitude:	-120.2675
Latiude:	36.7708
Stwellno:	13S16E30L002M
Districtco:	8
Welluseco:	Z
Countyco:	10
Gwcode:	502208
Site id:	CADW40000032773

Longitude:	-120.3019
Latiude:	36.7706
Stwellno:	13S15E26K001M
Districtco:	8
Welluseco:	Z
Countyco:	20
Gwcode:	502207
Site id:	CADW40000032764

Longitude:	-120.2681
Latiude:	36.7706
Stwellno:	13S16E30L003M
Districtco:	8
Welluseco:	Z
Countyco:	10
Gwcode:	502208
Site id:	CADW40000032763

Longitude:	-120.29
Latiude:	36.7703
Stwellno:	13S15E25L001M
Districtco:	8
Welluseco:	Z
Countyco:	20
Gwcode:	502207
Site id:	CADW40000032760

Longitude:	-120.2658
Latiude:	36.77
Stwellno:	13S16E30L001M
Districtco:	8
Welluseco:	Z
Countyco:	10
Gwcode:	502208
Site id:	CADW40000032758

Longitude:	-120.3814
Latiude:	36.7697
Stwellno:	13S15E30M001M
Districtco:	8
Welluseco:	Z
Countyco:	10
Gwcode:	502207
Site id:	CADW40000032755

Longitude:	-120.38
Latiude:	36.7675
Stwellno:	13S15E30L003M
Districtco:	8
Welluseco:	Z
Countyco:	10
Gwcode:	502207
Site id:	CADW40000032740

Longitude:	-120.2658
Latiude:	36.7667
Stwellno:	13S16E30Q001M
Districtco:	8
Welluseco:	Z
Countyco:	10
Gwcode:	502208
Site id:	CADW40000032737

GEOCHECK VERSION 2.1
STATE DATABASE WELL INFORMATION

Water System Information:

Map ID:	76		
Prime Station Code:	13S/15E-30G01 M	User ID:	AGE
FRDS Number:	1010021002	County:	Fresno
District Number:	11	Station Type:	WELL/AMBNT/MUN/INTAKE/SUPPLY
Water Type:	Well/Groundwater	Well Status:	Active Raw
Source Lat/Long:	364600.0 1202200.0	Precision:	Undefined
Source Name:	WELL 02		
System Number:	1010021		
System Name:	CITY OF MENDOTA		
Organization That Operates System:			
	643 QUINCE STREET		
	MENDOTA 93640		
Pop Served:	11000	Connections:	1362
Area Served:	MENDOTA		

Water System Information:

Map ID:	76		
Prime Station Code:	13S/15E-30G02 M	User ID:	AGE
FRDS Number:	1010021001	County:	Fresno
District Number:	11	Station Type:	WELL/AMBNT/MUN/INTAKE/SUPPLY
Water Type:	Well/Groundwater	Well Status:	Destroyed
Source Lat/Long:	364600.0 1202200.0	Precision:	Undefined
Source Name:	WELL 01 - DESTROYED		
System Number:	1010021		
System Name:	CITY OF MENDOTA		
Organization That Operates System:			
	643 QUINCE STREET		
	MENDOTA 93640		
Pop Served:	11000	Connections:	1362
Area Served:	MENDOTA		

Longitude:	-120.2892
Latiude:	36.7658
Stwellno:	13S15E25P001M
Districtco:	8
Welluseco:	Z
Countyco:	20
Gwcode:	502207
Site id:	CADW40000032732

Longitude:	-120.2914
Latiude:	36.7647
Stwellno:	13S15E25N001M
Districtco:	8
Welluseco:	Z
Countyco:	20
Gwcode:	502207
Site id:	CADW40000032728

Longitude:	-120.2931
Latiude:	36.7642
Stwellno:	13S15E25N002M
Districtco:	8
Welluseco:	Z
Countyco:	10
Gwcode:	502207
Site id:	CADW40000032716

Longitude:	-120.3225
Latiude:	36.7639
Stwellno:	13S15E27P001M
Districtco:	8
Welluseco:	Z
Countyco:	10
Gwcode:	502207
Site id:	CADW40000032708

Longitude:	-120.3225
Latiude:	36.7634
Stwellno:	13S15E34C002M
Districtco:	8
Welluseco:	Z
Countyco:	10
Gwcode:	502207
Site id:	CADW40000032697

Longitude:	-120.3225
Latiude:	36.7633
Stwellno:	13S15E34C001M
Districtco:	8
Welluseco:	Z
Countyco:	10
Gwcode:	502207
Site id:	CADW40000032687

Longitude:	-120.2861
Latiude:	36.7631
Stwellno:	13S15E36C001M
Districtco:	8
Welluseco:	Z
Countyco:	10
Gwcode:	502207
Site id:	CADW40000032677

Longitude:	-120.2861
Latiude:	36.7631
Stwellno:	13S15E36C002M
Districtco:	8
Welluseco:	Z
Countyco:	10
Gwcode:	502206
Site id:	CADW40000032678

Longitude:	-120.2847
Latiude:	36.7631
Stwellno:	13S15E36B001M
Districtco:	8
Welluseco:	Z
Countyco:	10
Gwcode:	502207
Site id:	CADW40000032675

Longitude:	-120.2847
Latiude:	36.7631
Stwellno:	13S15E36B002M
Districtco:	8
Welluseco:	Z
Countyco:	10
Gwcode:	502206
Site id:	CADW40000032676

Longitude:	-120.3128
Latiude:	36.7603
Stwellno:	13S15E35D005M
Districtco:	8
Welluseco:	Z
Countyco:	10
Gwcode:	502207
Site id:	CADW40000032667

Longitude:	-120.3128
Latiude:	36.7603
Stwellno:	13S15E35D003M
Districtco:	8
Welluseco:	Z
Countyco:	10
Gwcode:	502207
Site id:	CADW40000032666

Longitude:	-120.3128
Latiude:	36.7603
Stwellno:	13S15E35D001M
Districtco:	8
Welluseco:	Z
Countyco:	10
Gwcode:	502207
Site id:	CADW40000032664

Longitude:	-120.3128
Latiude:	36.7603
Stwellno:	13S15E35D002M
Districtco:	8
Welluseco:	Z
Countyco:	10
Gwcode:	502207
Site id:	CADW40000032665

Longitude:	-120.3128
Latiude:	36.7602
Stwellno:	13S15E35F001M
Districtco:	8
Welluseco:	Z
Countyco:	10
Gwcode:	502207
Site id:	CADW40000032663

Longitude:	-120.3136
Latiude:	36.76
Stwellno:	13S15E34A001M
Districtco:	8
Welluseco:	Z
Countyco:	10
Gwcode:	502207
Site id:	CADW40000032661

Longitude:	-120.3239
Latiude:	36.7561
Stwellno:	13S15E34L001M
Districtco:	8
Welluseco:	Z
Countyco:	10
Gwcode:	502207
Site id:	CADW40000032629

Longitude:	-120.3211
Latiude:	36.7561
Stwellno:	13S15E34K003M
Districtco:	8
Welluseco:	Z
Countyco:	10
Gwcode:	502207
Site id:	CADW40000032628

Longitude:	-120.3175
Latiude:	36.7561
Stwellno:	13S15E34J003M
Districtco:	8
Welluseco:	Z
Countyco:	10
Gwcode:	502207
Site id:	CADW40000032626

Longitude:	-120.3175
Latiude:	36.7561
Stwellno:	13S15E34J004M
Districtco:	8
Welluseco:	Z
Countyco:	10
Gwcode:	502207
Site id:	CADW40000032627

Longitude:	-120.3139
Latiude:	36.7561
Stwellno:	13S15E34J002M
Districtco:	8
Welluseco:	Z
Countyco:	10
Gwcode:	502207
Site id:	CADW40000032625

Longitude:	-120.3139
Latiude:	36.7561
Stwellno:	13S15E34J001M
Districtco:	8
Welluseco:	Z
Countyco:	10
Gwcode:	502207
Site id:	CADW40000032624

Longitude:	-120.3175
Latiude:	36.7539
Stwellno:	13S15E34J005M
Districtco:	8
Welluseco:	Z
Countyco:	10
Gwcode:	502207
Site id:	CADW40000032613

Longitude:	-120.3175
Latiude:	36.7539
Stwellno:	13S15E34J006M
Districtco:	8
Welluseco:	Z
Countyco:	10
Gwcode:	502207
Site id:	CADW40000032614

Longitude:	-120.3194
Latiude:	36.7525
Stwellno:	13S15E34R001M
Districtco:	8
Welluseco:	Z
Countyco:	10
Gwcode:	502207
Site id:	CADW40000032605

Longitude:	-120.3194
Latiude:	36.7525
Stwellno:	13S15E34R002M
Districtco:	8
Welluseco:	Z
Countyco:	10
Gwcode:	502207
Site id:	CADW40000032604

Longitude:	-120.3514
Latiude:	36.7489
Stwellno:	14S15E05A002M
Districtco:	8
Welluseco:	Z
Countyco:	10
Gwcode:	502207
Site id:	CADW40000032539

Longitude:	-120.3178
Latiude:	36.7486
Stwellno:	14S15E03A004M
Districtco:	8
Welluseco:	Z
Countyco:	10
Gwcode:	502207
Site id:	CADW40000032530

Longitude:	-120.3178
Latiude:	36.7486
Stwellno:	14S15E03A003M
Districtco:	8
Welluseco:	Z
Countyco:	10
Gwcode:	502207
Site id:	CADW40000032529

Longitude:	-120.3508
Latiude:	36.7472
Stwellno:	14S15E05A006M
Districtco:	8
Welluseco:	Z
Countyco:	10
Gwcode:	502207
Site id:	CADW40000032521

Longitude:	-120.3508
Latiude:	36.7472
Stwellno:	14S15E05A003M
Districtco:	8
Welluseco:	Z
Countyco:	10
Gwcode:	502207
Site id:	CADW40000032520

Longitude:	-120.3508
Latiude:	36.7467
Stwellno:	14S15E05A004M
Districtco:	8
Welluseco:	Z
Countyco:	10
Gwcode:	502207
Site id:	CADW40000032518

Longitude:	-120.3164
Latiude:	36.7456
Stwellno:	14S15E03A001M
Districtco:	8
Welluseco:	Z
Countyco:	10
Gwcode:	502207
Site id:	CADW40000032513

Longitude:	-120.3508
Latiude:	36.7453
Stwellno:	14S15E05A005M
Districtco:	8
Welluseco:	Z
Countyco:	10
Gwcode:	502207
Site id:	CADW40000032509

Longitude:	-120.3164
Latiude:	36.745
Stwellno:	14S15E03H001M
Districtco:	8
Welluseco:	Z
Countyco:	10
Gwcode:	502207
Site id:	CADW40000032505

GEOCHECK VERSION 2.1
STATE DATABASE WELL INFORMATION

Oil/Gas Well Information:

Map ID:	1		
Apinumber:	03900037	District:	5
Geodistric:	0	Statuscode:	006
Gissourcec:	HUD	Wellsymbol:	DH
Confidenti:	Not Reported	Countyname:	Madera
Leasename:	Gill Ranch		
Wellnumber:	23-24		
Operatorna:	Coast-Parker, Inc.		
Fieldname:	Gill Ranch Gas	Areaname:	Any Area
Section:	24	Township:	13S
Range:	15E	Basemeridi:	MD
Lat83:	36.78851089		
Long83:	-120.29223903		
Site id:	CAOG70000193193		

Map ID:	2		
Apinumber:	03920010	District:	5
Geodistric:	0	Statuscode:	006
Gissourcec:	HUD	Wellsymbol:	DH
Confidenti:	Not Reported	Countyname:	Madera
Leasename:	Neaves-Gill		
Wellnumber:	1		
Operatorna:	Neaves Petro. Developments		
Fieldname:	Gill Ranch Gas	Areaname:	Any Area
Section:	24	Township:	13S
Range:	15E	Basemeridi:	MD
Lat83:	36.78816983		
Long83:	-120.2820877		
Site id:	CAOG70000193190		

Map ID:	3		
Apinumber:	01921281	District:	5
Geodistric:	0	Statuscode:	006
Gissourcec:	HUD	Wellsymbol:	DH
Confidenti:	Not Reported	Countyname:	Fresno
Leasename:	DEM		
Wellnumber:	2		
Operatorna:	D. J. Pickrell, Oper.		
Fieldname:	Any Field	Areaname:	Any Area
Section:	21	Township:	13S
Range:	15E	Basemeridi:	MD

Lat83:	36.78320828
Long83:	-120.34398447
Site id:	CAOG70000193171

Map ID:	4		
Apinumber:	03920045	District:	5
Geodistric:	0	Statuscode:	006
Gissourcec:	HUD	Wellsymbol:	DH
Confidenti:	Not Reported	Countyname:	Madera
Leasename:	Getty Agri Bus		
Wellnumber:	A-1		
Operatorna:	Phillips Petro. Co.		
Fieldname:	Gill Ranch Gas	Areaname:	Any Area
Section:	19	Township:	13S
Range:	16E	Basemeridi:	MD
Lat83:	36.78236584		
Long83:	-120.27026718		
Site id:	CAOG70000193168		

Map ID:	5		
Apinumber:	01921173	District:	5
Geodistric:	0	Statuscode:	006
Gissourcec:	HUD	Wellsymbol:	DH
Confidenti:	Not Reported	Countyname:	Fresno
Leasename:	DEM		
Wellnumber:	1		
Operatorna:	D. J. Pickrell, Oper.		
Fieldname:	Any Field	Areaname:	Any Area
Section:	29	Township:	13S
Range:	15E	Basemeridi:	MD
Lat83:	36.77650545		
Long83:	-120.3545646		
Site id:	CAOG70000193159		

Map ID:	6		
Apinumber:	01920752	District:	5
Geodistric:	0	Statuscode:	006
Gissourcec:	HUD	Wellsymbol:	DH
Confidenti:	Not Reported	Countyname:	Fresno
Leasename:	B.B. CO.		
Wellnumber:	1		
Operatorna:	Atlantic Richfield Co.		
Fieldname:	Any Field	Areaname:	Any Area
Section:	28	Township:	13S
Range:	15E	Basemeridi:	MD

Lat83:	36.77443136
Long83:	-120.33466193
Site id:	CAOG70000193157

Map ID:	7		
Apinumber:	01906007	District:	5
Geodistric:	0	Statuscode:	006
Gissourcec:	HUD	Wellsymbol:	DH
Confidenti:	Not Reported	Countyname:	Fresno
Leasename:	Matheson		
Wellnumber:	1		
Operatorna:	Donco Co.		
Fieldname:	Any Field	Areaname:	Any Area
Section:	32	Township:	13S
Range:	15E	Basemeridi:	MD
Lat83:	36.76324274		
Long83:	-120.36796062		
Site id:	CAOG70000193152		

Map ID:	8		
Apinumber:	01922584	District:	5
Geodistric:	0	Statuscode:	006
Gissourcec:	HUD	Wellsymbol:	DH
Confidenti:	Not Reported	Countyname:	Fresno
Leasename:	Amstar		
Wellnumber:	1		
Operatorna:	Gamma Corp.		
Fieldname:	Any Field	Areaname:	Any Area
Section:	5	Township:	14S
Range:	15E	Basemeridi:	MD
Lat83:	36.73632695		
Long83:	-120.3589204		
Site id:	CAOG70000193134		

GEOCHECK VERSION 2.1
PUBLIC WATER SUPPLY SYSTEM INFORMATION

PWS SUMMARY:

Map ID:	96		
PWS ID:	CA1000101		
Date Initiated:	7706	Date Deactivated:	Not Reported
PWS Name:	CALIF DEPT OF FISH & GAME CALIF DEPT OF FISH & GAME SANTA FE GRADE MENDOTA, CA 93640		
Addressee / Facility:	System Owner/Responsible Party CALIF DEPT OF FISH & GAME P O BOX ??? MENDOTA, CA 93640		
Facility Latitude:	36 45 12	Facility Longitude:	120 22 50
City Served:	Not Reported		
Treatment Class:	Untreated	Population:	00000025

Violations information not reported.

CALIFORNIA GOVERNMENT WELL RECORDS SEARCHED

PWS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

State Database: CA Radon
Source: Department of Health Services
Telephone: 916-324-2208
Radon Database for California

Area Radon Information
Source: USGS
Telephone: 703-356-4020
The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones
Source: EPA
Telephone: 703-356-4020
Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

USGS Water Wells: USGS National Water Inventory System (NWIS)
This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

Water Well Database
Source: Department of Water Resources
Telephone: 916-651-9648

California Drinking Water Quality Database
Source: Department of Health Services
Telephone: 916-324-2319
The database includes all drinking water compliance and special studies monitoring for the state of California since 1984. It consists of over 3,200,000 individual analyses along with well and water system information.

California Oil and Gas Well Locations
Source: Department of Conservation
Telephone: 916-323-1779
Oil and Gas well locations in the state.

STREET AND ADDRESS INFORMATION

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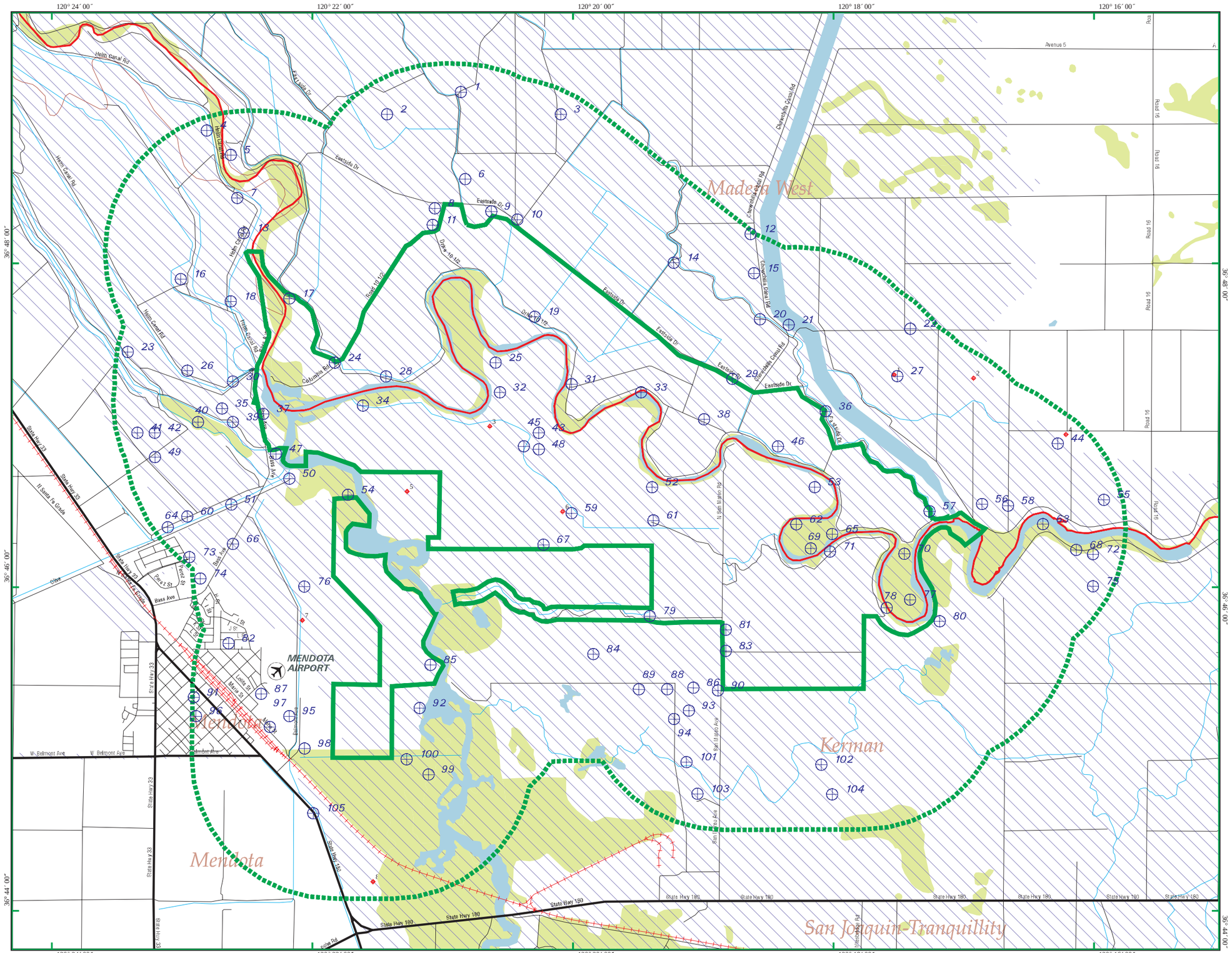
EDR DataMap®
Well Search



San Joaquin River Restoration Project Alternatives

- Listed Water Wells
- Oil & Gas Wells
- Study Boundary
- Roads
- Major Roads
- Waterways
- Railroads
- Contour Lines
- Fault Lines
- Water
- Superfund Sites
- 100-Yr Flood Zones
- Wetlands

N

Mendota, CA

0 1/2 1

Scale in Miles

EDR Environmental Data Resources, Inc

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Mendota Pool Bypass and Reach 2B Improvements Project

Final
Environmental Impact Statement/Report

Appendix 22-A. Data Sheets for the 24-hour Average Daily Traffic Count

SAN JOAQUIN RIVER
RESTORATION PROGRAM

Final
July 2016

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Prepared by NDS/ATD

VOLUME

Ripperdan Ave S/o Firebaugh Ave

Day: Wednesday
Date: 8/31/2011

City: Firebaugh
Project #: CA11_8043_001

DAILY TOTALS	NB	SB	EB	WB	Total
	1,613	1,484	0	0	3,097

AM Period	NB		SB		EB		WB		TOTAL		PM Period	NB		SB		EB		WB		TOTAL	
00:00	2		2						4		12:00	22		22						44	
00:15	1		1						2		12:15	11		14						25	
00:30	1		5						6		12:30	15		21						36	
00:45	3	7	6	14					9	21	12:45	29	77	24	81					53	158
01:00	2		4						6		13:00	22		11						33	
01:15	4		3						7		13:15	19		23						42	
01:30	3		3						6		13:30	23		25						48	
01:45	6	15	2	12					8	27	13:45	14	78	26	85					40	163
02:00	11		1						12		14:00	21		23						44	
02:15	9		2						11		14:15	29		25						54	
02:30	1		5						6		14:30	20		18						38	
02:45	3	24	6	14					9	38	14:45	26	96	32	98					58	194
03:00	5		11						16		15:00	22		23						45	
03:15	1		3						4		15:15	19		34						53	
03:30	0		3						3		15:30	15		29						44	
03:45	1	7	6	23					7	30	15:45	24	80	25	111					49	191
04:00	8		3						11		16:00	24		33						57	
04:15	3		6						9		16:15	31		26						57	
04:30	4		9						13		16:30	20		25						45	
04:45	13	28	6	24					19	52	16:45	29	104	28	112					57	216
05:00	14		18						32		17:00	23		27						50	
05:15	17		11						28		17:15	26		30						56	
05:30	21		18						39		17:30	23		26						49	
05:45	34	86	26	73					60	159	17:45	24	96	22	105					46	201
06:00	35		11						46		18:00	30		17						47	
06:15	26		14						40		18:15	37		22						59	
06:30	22		14						36		18:30	18		12						30	
06:45	33	116	16	55					49	171	18:45	16	101	13	64					29	165
07:00	21		32						53		19:00	31		14						45	
07:15	29		16						45		19:15	17		11						28	
07:30	32		20						52		19:30	25		11						36	
07:45	35	117	23	91					58	208	19:45	14	87	9	45					23	132
08:00	26		23						49		20:00	13		16						29	
08:15	28		23						51		20:15	10		16						26	
08:30	18		22						40		20:30	17		14						31	
08:45	16	88	18	86					34	174	20:45	12	52	4	50					16	102
09:00	24		21						45		21:00	14		5						19	
09:15	36		28						64		21:15	8		4						12	
09:30	15		26						41		21:30	10		4						14	
09:45	21	96	23	98					44	194	21:45	7	39	6	19					13	58
10:00	16		34						50		22:00	8		8						16	
10:15	22		15						37		22:15	15		4						19	
10:30	17		30						47		22:30	12		5						17	
10:45	15	70	20	99					35	169	22:45	11	46	8	25					19	71
11:00	21		20						41		23:00	7		1						8	
11:15	16		21						37		23:15	3		2						5	
11:30	16		23						39		23:30	8		4						12	
11:45	27	80	27	91					54	171	23:45	5	23	2	9					7	32
TOTALS		734		680						1414	TOTALS		879		804						1683
SPLIT %		51.9%		48.1%						45.7%	SPLIT %		52.2%		47.8%						54.3%

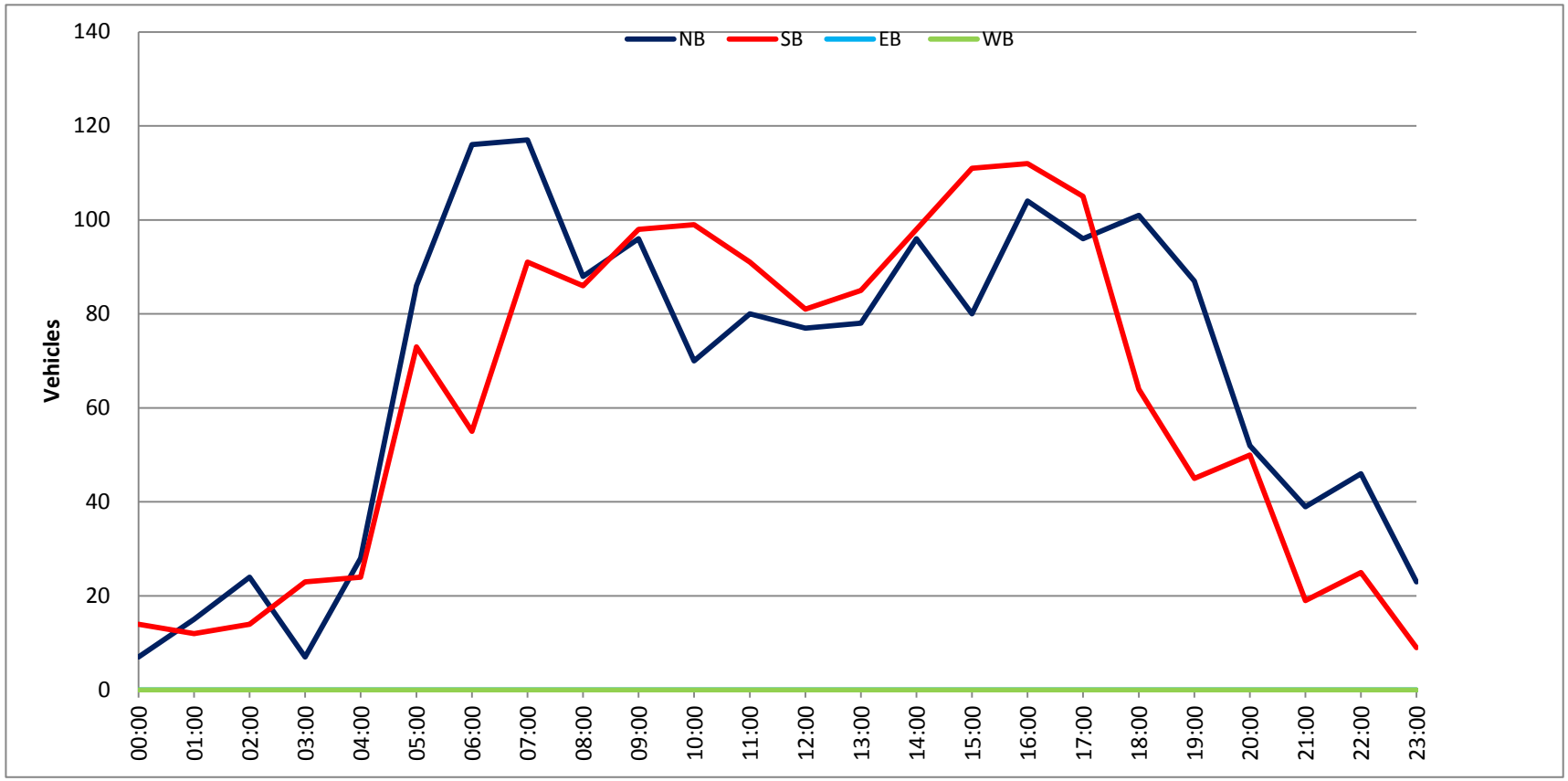
DAILY TOTALS	NB	SB	EB	WB	Total
	1,613	1,484	0	0	3,097

AM Peak Hour	07:15	09:15			07:30	PM Peak Hour	17:30	15:15			16:00
AM Pk Volume	122	111			210	PM Pk Volume	114	121			216
Pk Hr Factor	0.871	0.816			0.905	Pk Hr Factor	0.770	0.890			0.947
7 - 9 Volume	205	177	0	0	382	4 - 6 Volume	200	217	0	0	417
7 - 9 Peak Hour	07:15	07:00			07:30	4 - 6 Peak Hour	16:00	16:00			16:00
7 - 9 Pk Volume	122	91	0	0	210	4 - 6 Pk Volume	104	112	0	0	216
Pk Hr Factor	0.871	0.711	0.000	0.000	0.905	Pk Hr Factor	0.839	0.848	0.000	0.000	0.947

Prepared by NDS/ATD

Project #: CA11_8043_001 **City:** Firebaugh

Location: Ripperdan Ave S/o Firebaugh Ave **Date:** 8/31/2011



Prepared by NDS/ATD

VOLUME

Firebaugh Ave E/o Ripperdan Ave

Day: Wednesday
Date: 8/31/2011

City: Firebaugh
Project #: CA11_8043_002

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	1,496	1,543	3,039

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00			2		4		6		12:00			38		20		58	
00:15			6		3		9		12:15			32		12		44	
00:30			0		2		2		12:30			29		26		55	
00:45			4	12	1	10	5	22	12:45			26	125	28	86	54	211
01:00			1		1		2		13:00			19		16		35	
01:15			1		1		2		13:15			20		17		37	
01:30			3		6		9		13:30			27		18		45	
01:45			1	6	2	10	3	16	13:45			15	81	17	68	32	149
02:00			6		6		12		14:00			20		22		42	
02:15			1		19		20		14:15			20		18		38	
02:30			5		6		11		14:30			19		36		55	
02:45			1	13	0	31	1	44	14:45			20	79	29	105	49	184
03:00			1		3		4		15:00			19		16		35	
03:15			4		2		6		15:15			23		21		44	
03:30			1		2		3		15:30			23		16		39	
03:45			2	8	2	9	4	17	15:45			40	105	17	70	57	175
04:00			0		6		6		16:00			54		21		75	
04:15			3		17		20		16:15			43		22		65	
04:30			2		19		21		16:30			54		28		82	
04:45			5	10	19	61	24	71	16:45			39	190	21	92	60	282
05:00			11		36		47		17:00			30		31		61	
05:15			9		42		51		17:15			41		36		77	
05:30			13		71		84		17:30			22		30		52	
05:45			33	66	34	183	67	249	17:45			15	108	25	122	40	230
06:00			23		23		46		18:00			15		26		41	
06:15			21		20		41		18:15			23		26		49	
06:30			12		21		33		18:30			21		18		39	
06:45			15	71	16	80	31	151	18:45			17	76	13	83	30	159
07:00			17		17		34		19:00			23		8		31	
07:15			9		21		30		19:15			10		11		21	
07:30			37		15		52		19:30			14		15		29	
07:45			16	79	25	78	41	157	19:45			11	58	12	46	23	104
08:00			22		12		34		20:00			9		16		25	
08:15			24		23		47		20:15			6		19		25	
08:30			15		20		35		20:30			7		9		16	
08:45			10	71	22	77	32	148	20:45			4	26	10	54	14	80
09:00			21		15		36		21:00			5		8		13	
09:15			14		8		22		21:15			8		5		13	
09:30			19		13		32		21:30			7		6		13	
09:45			25	79	20	56	45	135	21:45			2	22	7	26	9	48
10:00			20		14		34		22:00			1		9		10	
10:15			19		14		33		22:15			4		8		12	
10:30			25		21		46		22:30			5		8		13	
10:45			15	79	21	70	36	149	22:45			5	15	12	37	17	52
11:00			18		12		30		23:00			3		13		16	
11:15			24		21		45		23:15			8		1		9	
11:30			17		12		29		23:30			10		1		11	
11:45			35	94	25	70	60	164	23:45			2	23	4	19	6	42
TOTALS				588		735		1323	TOTALS				908		808		1716
SPLIT %				44.4%		55.6%		43.5%	SPLIT %				52.9%		47.1%		56.5%

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	1,496	1,543	3,039

AM Peak Hour			11:45	05:00	05:00	PM Peak Hour			15:45	17:00	16:00
AM Pk Volume			134	183	249	PM Pk Volume			191	122	282
Pk Hr Factor			0.882	0.644	0.741	Pk Hr Factor			0.884	0.847	0.860
7 - 9 Volume	0	0	150	155	305	4 - 6 Volume	0	0	298	214	512
7 - 9 Peak Hour			07:30	07:45	07:30	4 - 6 Peak Hour			16:00	17:00	16:00
7 - 9 Pk Volume	0	0	99	80	174	4 - 6 Pk Volume	0	0	190	122	282
Pk Hr Factor	0.000	0.000	0.669	0.800	0.837	Pk Hr Factor	0.000	0.000	0.880	0.847	0.860

Prepared by NDS/ATD

Project #: CA11_8043_002 **City:** Firebaugh

Location: Firebaugh Ave E/o Ripperdan Ave **Date:** 8/31/2011

Prepared by NDS/ATD

VOLUME

Firebaugh Ave W/o Ripperdan Ave

Day: Wednesday
Date: 8/31/2011

City: Firebaugh
Project #: CA11_8043_003

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	2,684	2,776	5,460

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00			4		6		10		12:00			53		48		101	
00:15			6		4		10		12:15			47		19		66	
00:30			5		3		8		12:30			41		35		76	
00:45			8	23	3	16	11	39	12:45			42	183	51	153	93	336
01:00			5		3		8		13:00			23		29		52	
01:15			4		6		10		13:15			41		31		72	
01:30			6		8		14		13:30			43		34		77	
01:45			3	18	8	25	11	43	13:45			34	141	29	123	63	264
02:00			7		14		21		14:00			39		37		76	
02:15			4		29		33		14:15			40		47		87	
02:30			8		5		13		14:30			38		46		84	
02:45			6	25	4	52	10	77	14:45			47	164	49	179	96	343
03:00			12		7		19		15:00			35		24		59	
03:15			6		2		8		15:15			48		33		81	
03:30			6		2		8		15:30			44		25		69	
03:45			7	31	3	14	10	45	15:45			61	188	34	116	95	304
04:00			3		13		16		16:00			71		36		107	
04:15			9		20		29		16:15			65		50		115	
04:30			10		21		31		16:30			71		41		112	
04:45			14	36	28	82	42	118	16:45			53	260	42	169	95	429
05:00			19		39		58		17:00			59		47		106	
05:15			25		56		81		17:15			62		57		119	
05:30			27		83		110		17:30			46		51		97	
05:45			45	116	53	231	98	347	17:45			39	206	37	192	76	398
06:00			27		48		75		18:00			25		49		74	
06:15			28		38		66		18:15			42		55		97	
06:30			23		41		64		18:30			35		33		68	
06:45			24	102	39	166	63	268	18:45			31	133	28	165	59	298
07:00			39		31		70		19:00			28		37		65	
07:15			27		48		75		19:15			22		22		44	
07:30			48		34		82		19:30			25		40		65	
07:45			33	147	56	169	89	316	19:45			16	91	25	124	41	215
08:00			42		25		67		20:00			23		26		49	
08:15			33		40		73		20:15			23		26		49	
08:30			33		37		70		20:30			22		12		34	
08:45			29	137	34	136	63	273	20:45			21	89	8	72	29	161
09:00			37		37		74		21:00			11		31		42	
09:15			44		43		87		21:15			10		17		27	
09:30			44		29		73		21:30			9		16		25	
09:45			41	166	36	145	77	311	21:45			10	40	16	80	26	120
10:00			50		24		74		22:00			7		15		22	
10:15			27		34		61		22:15			9		22		31	
10:30			49		33		82		22:30			9		20		29	
10:45			25	151	25	116	50	267	22:45			11	36	17	74	28	110
11:00			31		29		60		23:00			3		21		24	
11:15			45		36		81		23:15			10		4		14	
11:30			37		20		57		23:30			11		8		19	
11:45			59	172	45	130	104	302	23:45			5	29	14	47	19	76
TOTALS				1124		1282		2406	TOTALS				1560		1494		3054
SPLIT %				46.7%		53.3%		44.1%	SPLIT %				51.1%		48.9%		55.9%

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	2,684	2,776	5,460

AM Peak Hour			11:45	05:15	05:15	PM Peak Hour			15:45	16:45	16:30
AM Pk Volume			200	240	364	PM Pk Volume			268	197	432
Pk Hr Factor			0.847	0.723	0.827	Pk Hr Factor			0.944	0.864	0.908
7 - 9 Volume	0	0	284	305	589	4 - 6 Volume	0	0	466	361	827
7 - 9 Peak Hour			07:30	07:00	07:00	4 - 6 Peak Hour			16:00	16:45	16:30
7 - 9 Pk Volume	0	0	156	169	316	4 - 6 Pk Volume	0	0	260	197	432
Pk Hr Factor	0.000	0.000	0.813	0.754	0.888	Pk Hr Factor	0.000	0.000	0.915	0.864	0.908

Prepared by NDS/ATD

Project #: CA11_8043_003 **City:** Firebaugh

Location: Firebaugh Ave W/o Ripperdan Ave **Date:** 8/31/2011

Prepared by NDS/ATD

VOLUME

Bass Ave near Delta/Mendota Canal

Day: Wednesday
Date: 8/31/2011

City: Firebaugh
Project #: CA11_8043_004

DAILY TOTALS	NB	SB	EB	WB	Total
	258	252	0	0	510

AM Period	NB		SB		EB		WB		TOTAL		PM Period	NB		SB		EB		WB		TOTAL	
00:00	0		0						0		12:00	2		4						6	
00:15	0		2						2		12:15	5		4						9	
00:30	0		0						0		12:30	2		3						5	
00:45	0		0	2					0	2	12:45	3	12	2	13					5	25
01:00	1		1						2		13:00	6		4						10	
01:15	0		0						0		13:15	5		3						8	
01:30	0		4						4		13:30	3		3						6	
01:45	0	1	0	5					0	6	13:45	4	18	3	13					7	31
02:00	0		0						0		14:00	8		4						12	
02:15	0		0						0		14:15	3		3						6	
02:30	0		0						0		14:30	2		4						6	
02:45	0		0						0		14:45	2	15	5	16					7	31
03:00	0		0						0		15:00	5		3						8	
03:15	0		0						0		15:15	4		2						6	
03:30	0		0						0		15:30	9		8						17	
03:45	0		0						0		15:45	6	24	4	17					10	41
04:00	0		0						0		16:00	6		5						11	
04:15	0		0						0		16:15	5		5						10	
04:30	0		0						0		16:30	3		3						6	
04:45	0		0						0		16:45	7	21	3	16					10	37
05:00	0		0						0		17:00	9		4						13	
05:15	2		2						4		17:15	2		5						7	
05:30	1		3						4		17:30	5		2						7	
05:45	0	3	0	5					0	8	17:45	6	22	6	17					12	39
06:00	3		0						3		18:00	5		8						13	
06:15	4		0						4		18:15	12		3						15	
06:30	0		1						1		18:30	10		5						15	
06:45	1	8	1	2					2	10	18:45	9	36	6	22					15	58
07:00	4		3						7		19:00	7		11						18	
07:15	3		3						6		19:15	7		7						14	
07:30	2		3						5		19:30	6		13						19	
07:45	2	11	0	9					2	20	19:45	5	25	7	38					12	63
08:00	3		1						4		20:00	5		9						14	
08:15	1		3						4		20:15	2		8						10	
08:30	1		5						6		20:30	1		3						4	
08:45	3	8	2	11					5	19	20:45	2	10	4	24					6	34
09:00	1		2						3		21:00	2		2						4	
09:15	1		5						6		21:15	1		2						3	
09:30	2		3						5		21:30	3		3						6	
09:45	4	8	1	11					5	19	21:45	0	6	1	8					1	14
10:00	3		0						3		22:00	1		1						2	
10:15	4		1						5		22:15	2		0						2	
10:30	5		3						8		22:30	1		2						3	
10:45	0	12	3	7					3	19	22:45	2	6	1	4					3	10
11:00	2		3						5		23:00	1		2						3	
11:15	4		2						6		23:15	0		0						0	
11:30	2		1						3		23:30	0		0						0	
11:45	3	11	3	9					6	20	23:45	0	1	1	3					1	4
TOTALS		62		61						**123**	**TOTALS**		196		191						**387**
SPLIT %		50.4%		49.6%						**24.1%**	**SPLIT %**		50.6%		49.4%						**75.9%**

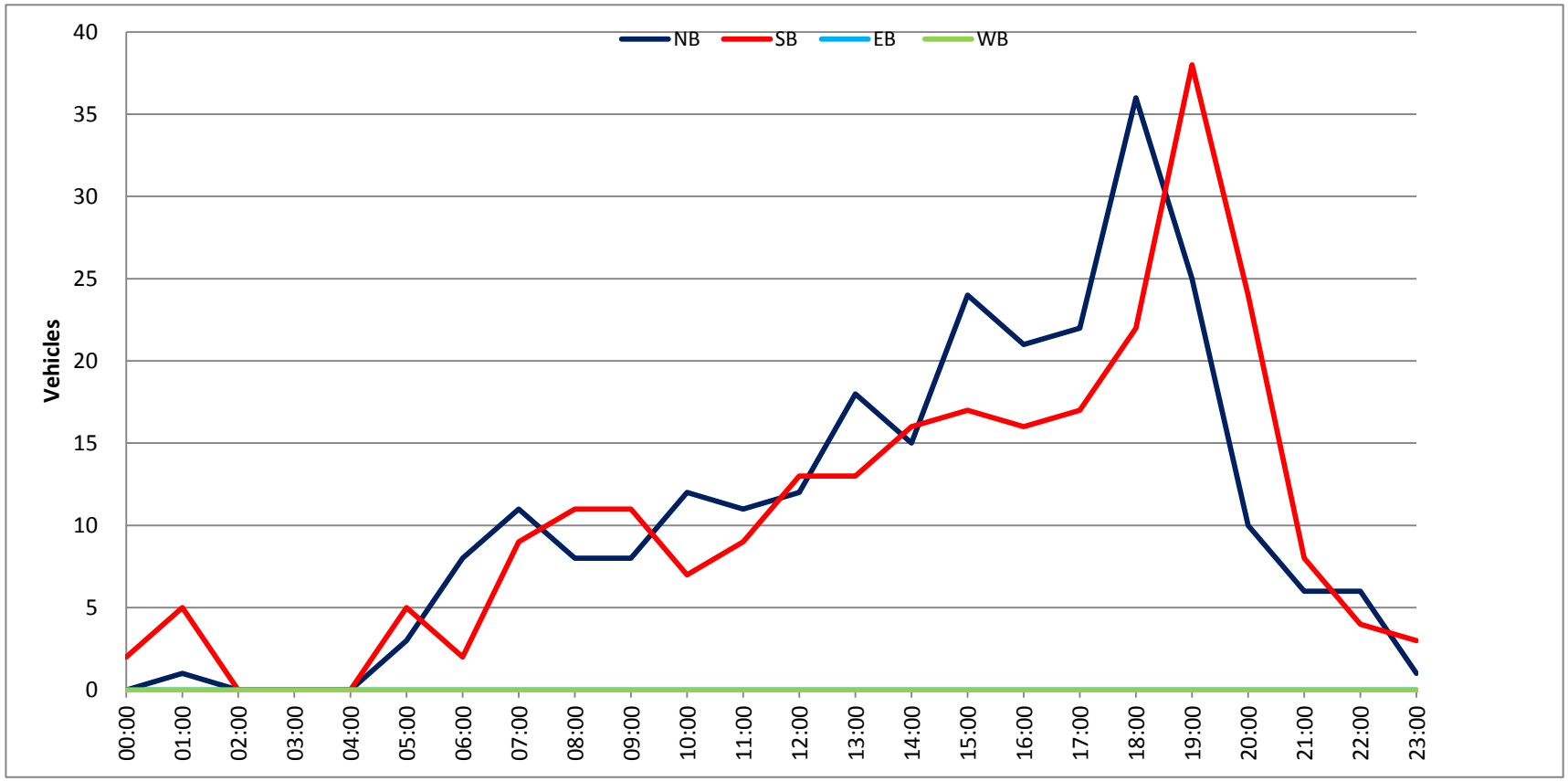
DAILY TOTALS	NB	SB	EB	WB	Total
	258	252	0	0	510

AM Peak Hour	09:45	08:30			**11:45**	**PM Peak Hour**	18:15	19:00			**18:45**
AM Pk Volume	16	14			**26**	**PM Pk Volume**	38	38			**66**
Pk Hr Factor	0.800	0.700			**0.722**	**Pk Hr Factor**	0.792	0.731			**0.868**
7 - 9 Volume	19	20	0	0	**39**	**4 - 6 Volume**	43	33	0	0	**76**
7 - 9 Peak Hour	07:00	08:00			**07:00**	**4 - 6 Peak Hour**	16:15	17:00			**16:15**
7 - 9 Pk Volume	11	11	0	0	**20**	**4 - 6 Pk Volume**	24	17	0	0	**39**
Pk Hr Factor	0.688	0.550	0.000	0.000	**0.714**	**Pk Hr Factor**	0.667	0.708	0.000	0.000	**0.750**

Prepared by NDS/ATD

Project #: CA11_8043_004 **City:** Firebaugh

Location: Bass Ave near Delta/Mendota Canal **Date:** 8/31/2011



Prepared by NDS/ATD

VOLUME

San Mateo Ave N/o SR-180

Day: Wednesday
Date: 8/31/2011

City: Firebaugh
Project #: CA11_8043_005

DAILY TOTALS	NB	SB	EB	WB	Total
	278	269	0	0	547

AM Period	NB		SB		EB		WB		TOTAL		PM Period	NB		SB		EB		WB		TOTAL	
00:00	0		0						0		12:00	7		11						18	
00:15	3		0						3		12:15	6		3						9	
00:30	0		0						0		12:30	11		5						16	
00:45	0	3	0						0	3	12:45	4	28	8	27					12	55
01:00	0		1						1		13:00	6		7						13	
01:15	0		0						0		13:15	5		6						11	
01:30	0		1						1		13:30	12		2						14	
01:45	0		0	2					0	2	13:45	6	29	9	24					15	53
02:00	0		0						0		14:00	8		6						14	
02:15	0		0						0		14:15	8		7						15	
02:30	0		0						0		14:30	8		3						11	
02:45	1	1	0						1	1	14:45	4	28	3	19					7	47
03:00	0		0						0		15:00	3		8						11	
03:15	0		0						0		15:15	7		3						10	
03:30	0		0						0		15:30	8		6						14	
03:45	3	3	2	2					5	5	15:45	10	28	4	21					14	49
04:00	0		0						0		16:00	6		7						13	
04:15	0		0						0		16:15	6		5						11	
04:30	1		0						1		16:30	4		7						11	
04:45	0	1	0						0	1	16:45	2	18	4	23					6	41
05:00	0		0						0		17:00	3		2						5	
05:15	0		0						0		17:15	2		2						4	
05:30	0		5						5		17:30	1		1						2	
05:45	0		13	18					13	18	17:45	1	7	4	9					5	16
06:00	2		11						13		18:00	3		3						6	
06:15	0		5						5		18:15	2		3						5	
06:30	2		3						5		18:30	1		1						2	
06:45	3	7	1	20					4	27	18:45	2	8	2	9					4	17
07:00	0		1						1		19:00	1		4						5	
07:15	3		4						7		19:15	7		1						8	
07:30	5		3						8		19:30	1		1						2	
07:45	5	13	3	11					8	24	19:45	1	10	2	8					3	18
08:00	4		0						4		20:00	2		0						2	
08:15	4		5						9		20:15	2		1						3	
08:30	3		6						9		20:30	1		1						2	
08:45	5	16	2	13					7	29	20:45	0	5	0	2					0	7
09:00	2		4						6		21:00	0		0						0	
09:15	2		4						6		21:15	1		1						2	
09:30	1		2						3		21:30	2		2						4	
09:45	7	12	1	11					8	23	21:45	0	3	1	4					1	7
10:00	4		9						13		22:00	1		1						2	
10:15	9		1						10		22:15	0		0						0	
10:30	11		1						12		22:30	2		0						2	
10:45	8	32	4	15					12	47	22:45	0	3	1	2					1	5
11:00	4		10						14		23:00	0		5						5	
11:15	6		0						6		23:15	0		0						0	
11:30	3		9						12		23:30	0		0						0	
11:45	10	23	5	24					15	47	23:45	0		0	5					0	5
TOTALS		111		116						**227**	**TOTALS**		167		153						**320**
SPLIT %		48.9%		51.1%						**41.5%**	**SPLIT %**		52.2%		47.8%						**58.5%**

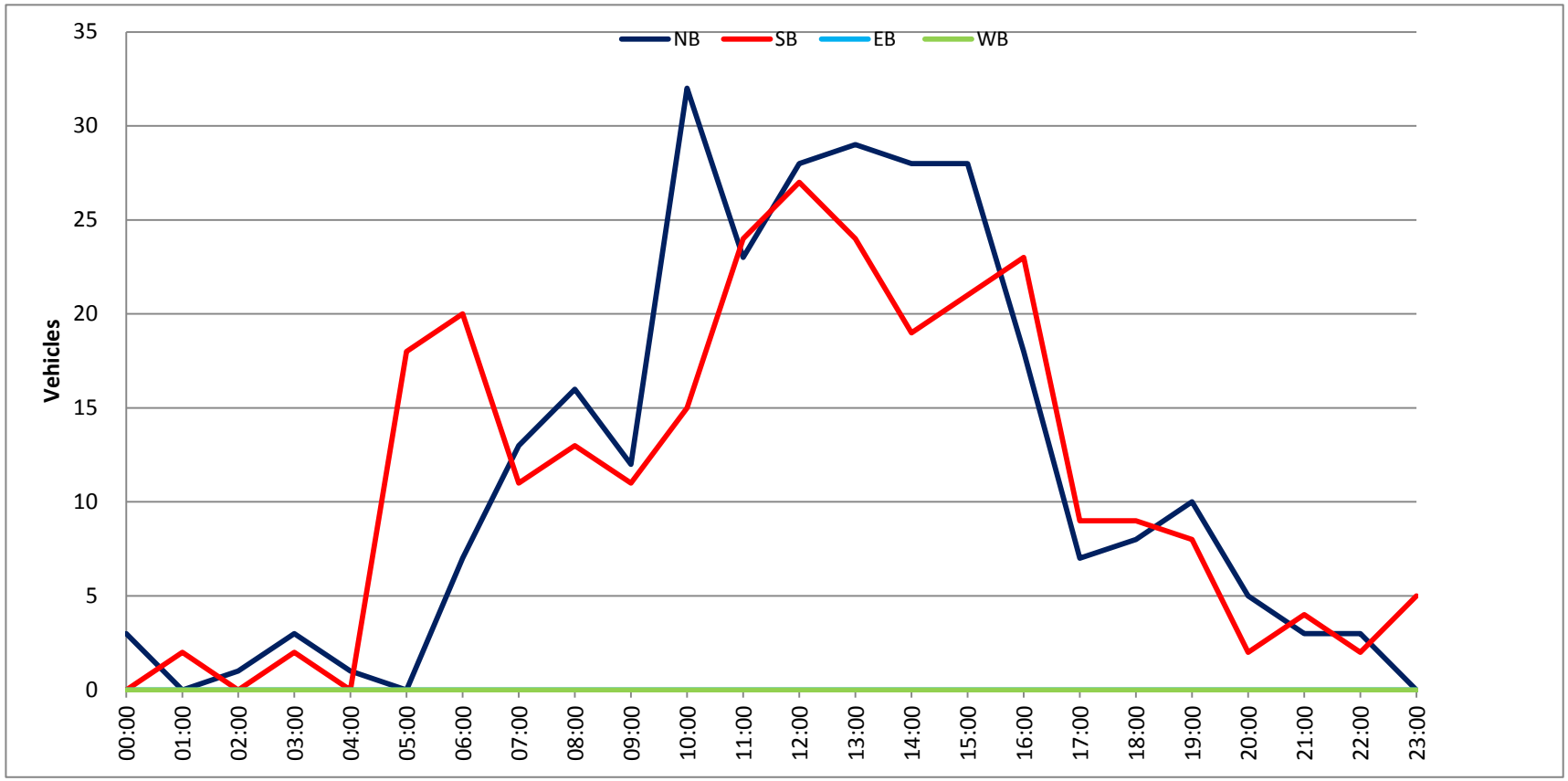
DAILY TOTALS	NB	SB	EB	WB	Total
	278	269	0	0	547

AM Peak Hour	11:45	05:30			**11:45**	**PM Peak Hour**	13:30	12:00			**13:30**
AM Pk Volume	34	34			**58**	**PM Pk Volume**	34	27			**58**
Pk Hr Factor	0.773	0.654			**0.806**	**Pk Hr Factor**	0.708	0.614			**0.967**
7 - 9 Volume	29	24	0	0	**53**	**4 - 6 Volume**	25	32	0	0	**57**
7 - 9 Peak Hour	07:30	07:45			**07:45**	**4 - 6 Peak Hour**	16:00	16:00			**16:00**
7 - 9 Pk Volume	18	14	0	0	**30**	**4 - 6 Pk Volume**	18	23	0	0	**41**
Pk Hr Factor	0.900	0.583	0.000	0.000	**0.833**	**Pk Hr Factor**	0.750	0.821	0.000	0.000	**0.788**

Prepared by NDS/ATD

Project #: CA11_8043_005 **City:** Firebaugh

Location: San Mateo Ave N/o SR-180 **Date:** 8/31/2011



Mendota Pool Bypass and Reach 2B Improvements Project

Final
Environmental Impact Statement/Report

Part VI – Appendices to the Response to Comments

SAN JOAQUIN RIVER
RESTORATION PROGRAM

Final
July 2016

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Mendota Pool Bypass and Reach 2B Improvements Project

Final
Environmental Impact Statement/Report

Mendota Pool Entrainment: Fish Screen Assessment Technical Memorandum

SAN JOAQUIN RIVER
RESTORATION PROGRAM

Final
July 2016

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Mendota Pool Entrainment: Fish Screen Assessment

Technical Memorandum

U.S. Department of the Interior
Bureau of Reclamation

July 2016

Mission Statements

The mission of the Department of the Interior is to protect and provide access to our Nation's natural and cultural heritage and honor our trust responsibilities to Indian Tribes and our commitments to island communities.

The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

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Abbreviations and Acronyms

CALSIM	California Statewide Integrated Model
CCC	Columbia Canal Company
CCID	Central California Irrigation District
cfs	cubic feet per second
CVP	Central Valley Project
Delta	Sacramento–San Joaquin Delta
DMC	Delta–Mendota Canal
DFW	California Department of Fish and Wildlife
DWR	California Department of Water Resources
ESA	Endangered Species Act
FCWD	Firebaugh Canal Water District
LSJLD	Lower San Joaquin Levee District
NMFS	National Marine Fisheries Service
NRDC	Natural Resources Defense Council
Reclamation	U.S. Department of the Interior, Bureau of Reclamation
RWA	SJRRP Reclaimed Water Account
Secretary	U.S. Secretary of the Interior
Settlement	Stipulation of Settlement in *NRDC, et al., v. Kirk Rodgers, et al.*
SJFMWG	San Joaquin Fish Management Work Group
SJREC	San Joaquin River Exchange Contractors
SJRRP	San Joaquin River Restoration Program
SLCC	San Luis Canal Company
SWP	State Water Project
TAF	thousand acre–feet
USFWS	U.S. Fish and Wildlife Service
WY	water year

1.0 Statement of Purpose

Consistent with the Stipulation of Settlement in *NRDC, et al., v. Rodgers, et al.,* (Settlement), the Bureau of Reclamation (Reclamation) is working to implement the channel and structural improvements in the San Joaquin River called for in Paragraph 11(a) of the Settlement. Specifically, Paragraph 11(a)(1) of the Settlement requires the following: creation of a bypass channel around Mendota Pool to ensure conveyance of at least 4,500 cfs from Reach 2B downstream to Reach 3. This improvement requires construction of a structure capable of directing flow down the bypass and allowing the Secretary to make deliveries of San Joaquin River water into Mendota Pool when necessary. However, the Settlement does not require a screen at the planned Mendota Pool Bypass. There may be a need to install a fish screen to protect juvenile salmon migrating downstream from entrainment (a fisheries term for the incidental trapping of fish in waters being diverted for irrigation or similar purposes) at Mendota Pool.

This study was conducted to determine the degree of benefit a screen would provide to the San Joaquin River Restoration Program (SJRRP). The fish screen would be designed to direct fish into the new Mendota Pool Bypass channel and minimize or avoid fish passage from Reach 2B to Mendota Pool.

This analysis assumes that juvenile fish swim along with flows, and therefore split in proportion to flows at junctions. The frequency and volume of water that would be passed into Mendota Pool in a daily operations model scenario was used to estimate the likelihood of juvenile Chinook salmon entering Mendota Pool, where the many water management structures and predators are likely to cause high mortality. Only the entrainment of juvenile fall–run and spring–run Chinook salmon was analyzed, though some of the results would be applicable to other fish species with additional analysis.

2.0 Background

Water districts and landowners in the Restoration Area have expressed concerns regarding potential Endangered Species Act (ESA) enforcement as a result of unscreened diversions causing take of listed fish that would not be present in the system absent SJRRP Restoration Flows. Additionally, the San Joaquin Fish Management Work Group has identified entrainment as a high priority limiting factor (SJFMWG 2009). The potential effectiveness of small screens on juvenile salmon and other fishes has been uncertain, however. The Mendota Pool Bypass and Reach 2B Channel Improvements Project will soon require a decision on whether screening Mendota Pool is necessary, and thus should be part of the ongoing design efforts.

This analysis of fish entrainment is pertinent to the Reach 2B Channel Improvements Project. This action would be located just upstream of Mendota Pool and includes the creation of a bypass channel and structure that could selectively route flow either into or around Mendota Pool.

There are two primary scenarios where water from the San Joaquin River would flow into Mendota Pool after construction of the Mendota Pool Bypass. One is when flood flows are released from Friant Dam, either to improve the storage potential of Millerton Lake to retain floods, or when the reservoir is spilling water. Under this condition, water is diverted into Mendota Pool to be utilized by San Joaquin River Exchange Contractors (SJREC). The second scenario occurs when water is released from Friant Dam with the express purpose of supplying water to the SJREC in fulfillment of the Second Amended Contract for the Exchange of Waters.

This analysis uses a daily flow model combining historical hydrology with future river conditions (and associated SJRRP Flows). It uses only one scenario of flow and flood operation deemed to be the most likely, and uses a more complex pattern of juvenile salmon emigration (i.e. fish movement out of the river system) than was employed for a previous draft analysis of the need for a fish screen (SJRRP 2009). It also adds an analysis of entrainment of juvenile steelhead trout.

2.1 Program Background

In 1988, a coalition of environmental groups led by the Natural Resources Defense Council (NRDC) filed a lawsuit challenging the renewal of long–term water service contracts between the United States and the Central Valley Project, Friant Division contractors, *NRDC, et al., v. Kirk Rodgers, et al.*, Case No. CIV S–88–1658 LKK/GGH. On September 13, 2006, after more than 18 years of litigation, NRDC, Friant Water Authority, and the U.S. Departments of the Interior and Commerce agreed on terms and conditions for a Settlement. The Settlement established two goals:

- **Restoration** – To restore and maintain fish populations in “good condition” in the main stem of the San Joaquin River below Friant Dam to the confluence of the Merced River, including naturally reproducing and self–sustaining populations of salmon and other fish.

- **Water Management** – To reduce or avoid adverse water supply impacts on all of the Friant Division long–term contractors that may result from the Interim Flows and Restoration Flows.

The Settlement establishes a framework for accomplishing the Restoration and Water Management goals that will require environmental compliance, design, construction, and monitoring of projects over a multiple–year period. To achieve the Restoration Goal, the Settlement calls for a combination of channel and structural modifications along the San Joaquin River below Friant Dam, releases of water from Friant Dam to the confluence of the Merced River, and reintroduction of Chinook salmon. To achieve the Water Management Goal, the Settlement calls for downstream recapture of Interim and Restoration flows and recirculation of that water to reduce or avoid water supply impacts to the Friant Division long–term contractors resulting from the release of Interim and Restoration flows. In addition, the Settlement establishes a Recovered Water Account (RWA) and allows for the delivery of surplus water supplies to the Friant Division long–term contractors during wet hydrologic conditions.

The SJRRP is the program established to implement the Settlement. Implementing agencies responsible for managing and implementing the SJRRP are Reclamation, U.S. Fish and Wildlife Service (USFWS), National Marine Fisheries Service (NMFS), the California Department of Water Resources (DWR), and California Department of Fish and Wildlife (DFW). The Settlement Act, included in Public Law 111–11, the Omnibus Public Lands Management Act of 2009, authorizes and directs the Secretary of the Interior to implement the terms and conditions of the Settlement.

2.2 Description of Flow Routing and River Features

The Restoration Area extends from Friant Dam downstream the San Joaquin River and associated channels to the confluence with the Merced River. The San Joaquin River is divided up into five reaches, numbered 1 at the upstream end just below Friant Dam, to 5 just before the confluence with the Merced River. This analysis deals with the upper part of the Restoration Area, from Friant Dam to Mendota Pool — which sits at the transition between Reach 2 and Reach 3. Reaches are further subdivided into sections labeled “A”, “B”, etc. Mendota Pool is the site of the Reach 2B Channel Improvements Project, which includes a bypass channel that would route flows around Mendota Pool and spans from Reach 2B to Reach 3.

Mendota Pool is the small reservoir created by Mendota Dam and has both a San Joaquin River arm and a Fresno Slough arm. The San Joaquin arm of Mendota Pool is the portion of Reach 2B that extends east from Mendota Dam upstream to the San Mateo Road crossing. The Fresno Slough arm of Mendota Pool, also known as the James Bypass, extends several miles south of the San Joaquin River. The pool serves as a distribution point for irrigation water supplies delivered by the Delta–Mendota Canal and for refuge water supply deliveries to the Mendota Wildlife Area.

Mendota Pool delivers water to the San Joaquin River Exchange Contractors (SJREC), other Central Valley Project (CVP) contractors, Settlement contractors, wildlife refuges and management areas, and State Water Project (SWP) contractors. Water delivered to Mendota Pool from the Delta–Mendota Canal (DMC) is withdrawn at seven canal or pump locations in the pool, leaving a portion of water to be discharged down the San Joaquin River for delivery to the Arroyo Canal downstream from Mendota Dam.

The following describes the pertinent elements of the Restoration Area now that Restoration Flows have begun. When elements of flow routing or operations will be changed by the Reach

2B Channel Improvements Project, it is so noted. The analysis for fish entrainment at Mendota Pool assumes the Reach 2B Channel Improvements Project is complete.

2.2.1 Friant Dam & Millerton Lake

Friant Dam impounds Millerton Lake. Flows from Millerton Lake are routed through the Madera and Friant–Kern canals to provide water for the Friant Division long–term contractors. Millerton Lake is operated as an annual reservoir — all water supplies available in a given year are allocated with the expectation of delivery. Prior to the start of SJRRP Flows, average annual Friant Dam releases had a baseflow of 40 to 250 cfs (McBain and Trush, 2002). Restoration Flows augment this historical average in all water year types except Critical–Low water years. Restoration Flows range from an additional 100 cfs to 4,000 cfs depending on the time of year, water availability, and schedule established by the Restoration Administrator. During flood conditions, releases from Millerton Lake are sent down the San Joaquin River or flood bypasses to preserve life and property, with guidance provided in the Operation Manual (Reclamation Board, 1969).

2.2.2 Reach 1

Reach 1 is 42 miles long, from just below Friant Dam to approximately Gravelly Ford. The current maximum average flow through Reach 1 is 8,000 cfs (Reclamation Board, 1969; Mussetter, 2002). Flows within Reach 1 are predominantly influenced by releases from Friant Dam, along with diversions and seepage losses. River releases in Reach 1 are made to comply with Holding Contract requirements (relatively small prior water rights holders along the channel) and for SJRRP Restoration Flows. Streamflow of at least 5 cfs must be maintained past the last diversion near Gravelly Ford for the Holding Contract requirements. Restoration Flows often substantially increase the flows at the end of Reach 1 at Gravelly Ford, the degree to which ranges widely depending on time of year and water year type (Restoration Flow Guidelines, 2013). Reach 1 serves as the predominant spawning and holding habitat for salmon.

2.2.3 Reach 2A

Reach 2A stretches 9 from near Gravelly Ford to the Chowchilla Bifurcation Structure. The Army Corps of Engineers recommended flow capacity of Reach 2A is 8,000 cfs (McBain and Trush, 2002). Reach 2A is typified by the accumulation of sand caused in part by backwater effects of the Chowchilla Bypass Bifurcation Structure and by a lower gradient relative to Reach 1, and thus has high infiltration losses. Reach 2A was typically dry before Restoration Flows were initiated.

2.2.4 Chowchilla Bypass & Chowchilla Bifurcation Structure

The Chowchilla Bypass extends from the Chowchilla Bypass Bifurcation Structure to the Eastside Bypass at the confluence of the Fresno River. The Chowchilla Bypass Bifurcation Structure at the head of Reach 2B regulates the flow split between the San Joaquin River and Chowchilla Bypass. The design channel capacity of the Chowchilla Bypass is 5,500 cfs (Reclamation Board, 1969). The bypass is constructed in highly permeable soils, and much of the initial flows infiltrate and recharge groundwater. The structure is operated according to the Lower San Joaquin Flood Control Project Operations Manual (Reclamation Board, 1969).

The current operation of the bifurcation structure routes the first 1,300 cfs to Mendota Pool via Reach 2B (SJRRMC, 2007). Other operational guidance suggests 1,120 cfs (California Department of Water Resources), 1,400 cfs (CalSim), or 1,500 cfs (Musseter 2002). The subsequent 5,500 cfs (1,500 to 7,000 cfs of total flow) is routed into the Chowchilla Bypass, with

the next increment of 1,000 cfs (7,000 cfs to 8,000 cfs total flow) being directed again into Reach 2B (Mussetter, 2002; McBain and Trush, 2002). The structure is typically operated to provide as steady flow as possible into Reach 2B when Mendota Pool is taking water through irrigation demand (Mussetter, 2002; McBain and Trush, 2002).

Flood flows may enter Mendota Pool from either the Kings River via the James Bypass and Fresno Slough or the San Joaquin River. The design capacity of Reach 3 below Mendota Pool is 4,500 cfs (Reclamation Board, 1969). Therefore, to minimize damage to life and property, flows into Reach 2B would be proportionally reduced when the combined volume from the James Bypass and San Joaquin River minus the uptake at Mendota Pool exceed 4,500 cfs.

Should flows exceed 8,000 cfs at the Chowchilla Bifurcation Structure or 10,000 cfs total between the San Joaquin River and the Kings River, the Lower San Joaquin Levee District is to operate the bifurcation structure *"at their own discretion with the objective of minimizing damage to the flood control project and protected area."* (Reclamation Board, 1969).

2.2.4.1 Post Construction Operations

With the completion of the Reach 2B Channel Improvements Project and other independent projects to improve channel capacity in Reaches 3, 4, and 5, Restoration Flows will be routed to Reach 2B and through the newly built Mendota Pool Bypass. In flood flow situations, the Lower San Joaquin Levee District (LSJLD) will continue to operate in accordance with the flood control manual and to minimize loss of life and property. When just the San Joaquin River is in flood, the LSJLD could choose to route flood flows through the Chowchilla Bypass, or through Reach 2B of the San Joaquin River (and either through the Mendota Pool Bypass or into Mendota Pool). If James Bypass is contributing flood flows, flood flows from the San Joaquin River would generally be routed into the Chowchilla Bypass. Flows in excess of 10,000 cfs (or less depending on James Bypass flows) would be handled "*at their own discretion"* as before.

2.2.5 Reach 2B

Reach 2B is a sandy channel extending 11 miles from Chowchilla Bifurcation Structure into Mendota Pool. Reach 2B ends at Mendota Dam, and Mendota Pool backs water up the San Joaquin River to San Mateo Road. Significant seepage has been observed at flows above 1,300 cfs (SJRRMC 2007). Flow in Reach 2B is set by the Chowchilla Bifurcation Structure as described above.

2.2.5.1 Post Construction Operations

With the completion of the Reach 2B Channel Improvements Project, the capacity of Reach 2B will be increased to 4,500 cfs (SJRRP, 2011). The Mendota Bifurcation Structure would be placed in the lower half of Reach 2B just upstream of Mendota Pool.

2.2.6 Mendota Pool

Mendota Pool acts as a forebay amid the San Joaquin River channel — the primary function of which is to distribute water from the DMC and San Joaquin River to local diversion points. There are three main inlets to Mendota Pool: Reach 2B of the San Joaquin River, Fresno Slough/James Bypass, and the DMC There are multiple outlets, including: Main Canal, Outside Canal, Firebaugh Canal, Helm Ditch, Columbia Canal Company's Canal, Mowry Canal, and the downstream San Joaquin River (SJRRMC, 2003) (Figure 2–1). Up to 700 cfs of water from

Mendota Pool is discharged from the dam into the San Joaquin River for delivery to the Arroyo Canal, located about 23 miles downstream of the dam.

Flows into Mendota Pool are supplemented from the DMC, and also with deliveries from the Fresno Slough/James Bypass and San Joaquin River during occasional flood releases from Friant and Pine Flat Dams. Except in floods and during Exchange Contractor releases from Friant Dam as occurred in 2014 and 2015, the DMC is the primary source of water to Mendota Pool. Mendota Pool delivers water to the SJREC, other CVP contractors, wildlife refuges and management areas, and SWP contractors. Mendota Pool provides no long–term storage for water supply operations or flood management. The pool averages about 400 feet wide, is generally less than 10 feet deep, and has a total capacity of about 3,000 acre–feet. Mendota Dam, which impounds the pool, is owned and operated by the Central California Irrigation District. Manual gates and flashboards are opened or removed during periods of high flow to reduce seepage impacts on land surrounding Mendota Pool.

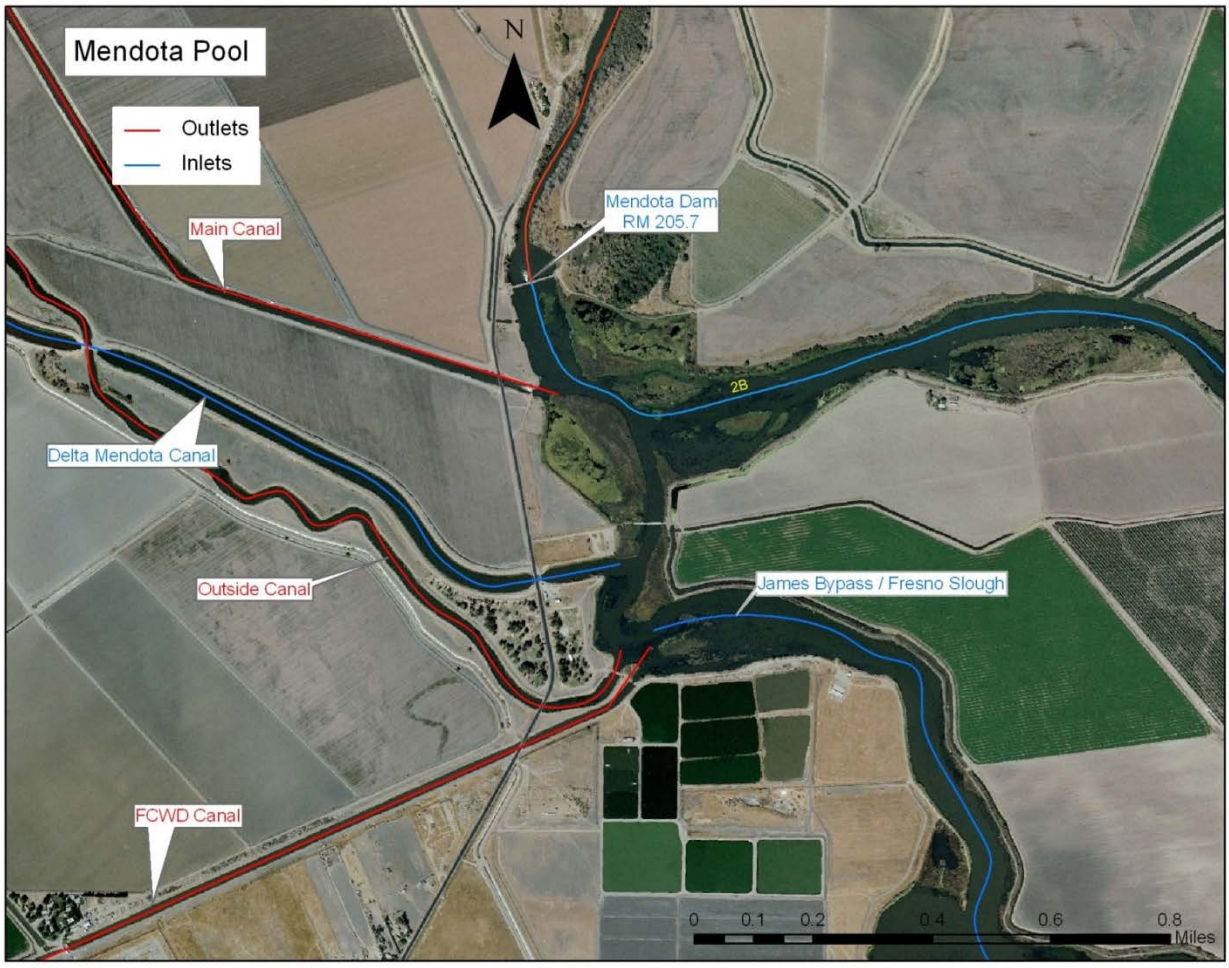


Figure 2-1. Mendota Pool Schematic Prior to Completion of Mendota Pool Bypass

2.2.6.1 Post Construction Operations

With the completion of the Reach 2B Channel Improvements Project, Mendota Pool will then be one of two routes for water into Reach 3. Restoration Flows would be intentionally diverted

around Mendota Pool. San Joaquin River flood flows would be routed into Mendota Pool, but only to the extent that irrigator demand could utilize such flows; otherwise flood flows would be routed through the Mendota Pool Bypass. Flows for delivery to the Arroyo Canal, located 23 miles downstream, would be released from Mendota Dam if the water source was Mendota Pool (and its associated outlet canals and pumps), or would primarily be routed through the Mendota Pool Bypass if the source was San Joaquin River water (either flood flows or Exchange Contractor Releases). Arroyo Canal deliveries from flood flows or Exchange Contractor releases could also be routed through Mendota Pool.

2.2.7 Mendota Pool Bypass and Mendota Bifurcation Structure

As specified in the Settlement, Paragraph 11(a)(1), "a bypass channel will be created around Mendota Pool to ensure conveyance of at least 4,500 cfs from Reach 2B downstream to Reach 3. This improvement requires construction of a structure capable of directing flow down the bypass and allowing the Secretary to make deliveries of San Joaquin River water into Mendota Pool when necessary." The Mendota Pool Bypass will be the principal conveyer of Restoration Flows. The existing river channel, from the future Mendota Bifurcation Structure to Mendota Pool, will be retained and will have a channel capacity of 2,500 cfs.

During future floods, up to 2,500 cfs of flood deliveries may be made to Mendota Pool for Exchange Contractor use, with the remainder going through the Mendota Pool Bypass (also known as the Compact Bypass) or Chowchilla Bypass, at the discretion of the operator. Less than 2,500 cfs will be routed to Mendota Pool, with the remainder flowing through the bypass, if the combined flow into Mendota Pool from James Bypass and Reach 2B exceed the demand for water. This is discussed in section 3.4. In addition, San Joaquin River water for San Luis Canal Company (SLCC) would be routed through the Mendota Pool Bypass during flood flows.

The many diversion canals at Mendota Pool make it a source of fish entrainment. The potential Mendota Pool Fish Screen, the subject of this analysis, would be located at the Mendota Bifurcation Structure and would screen the channel entrance to Mendota Pool. The screen would require that a minimum fraction of flow be routed to the Mendota Pool Bypass to allow emigrating juvenile and other fish to escape the screen.

2.2.8 James Bypass

Fresno Slough delivers flood water from the Kings River to Mendota Pool via James Bypass; it generally only flows during floods. Flows from the Kings River are regulated by Pine Flat Dam releases and the Crescent Weir, which are operated by the Kings River Conservation District. The discharge to James Bypass from Pine Flat Dam on the Kings River ranges from 0 to 5,000 cfs (Reclamation, 1969), with 4,750 cfs the general operating limit. These flood flows are conveyed through the James Bypass to Mendota Pool and from there, through Reach 3. Some of James Bypass flood water is able to be collected in Mendota Pool; with the remainder continuing to flow downstream when it exceeds the demand for water at Mendota Pool.

2.2.9 Delta–Mendota Canal

The DMC carries water from the Jones Pumping Plant in the Sacramento–San Joaquin Delta along the west side of the San Joaquin Valley to its terminus at Mendota Pool. It is used by the Delta Division, West San Joaquin Division, San Felipe Division, wildlife refuges, and the Exchange Contractors and other Settlement contractors. This is the main supply to Mendota Pool. The DMC typically conveys on the order of 2,500 to 2,800 cfs to Mendota Pool during the peak irrigation season (McBain and Trush, 2002).

2.2.10 Exchange Contractors Canals

There are multiple canals draining Mendota Pool, the largest ones including Main and Outside Canals. These irrigation canals provide water to the SJREC. Through an Exchange Contract, Reclamation provides a substitute water supply via the DMC to the Exchange Contractors (Central California Irrigation District (CCID), Columbia Canal Company (CCC), Firebaugh Canal Water District (FCWD), and the San Luis Canal Company (SLCC)), in exchange for the use of waters of the San Joaquin River within the Friant Division. Three of these Exchange Contractors draw upon Mendota Pool, with SLCC maintaining a canal at Arroyo Canal downstream. When water is available at Mendota Pool from the San Joaquin River or Kings River (occurrences typically associated with wet conditions), the water is used to offset the need to provide the Exchange Contractors with water from the DMC. The Exchange Contractors can also call upon water from Millerton Lake under certain circumstances as occurred in 2014 and 2015.

2.2.11 Reach 3

Reach 3 flows 23 miles along a sandy channel from Mendota Dam to Sack Dam, past the town of Firebaugh. The design capacity of Reach 3 is 4,500 cfs, though anecdotal observations suggest that flooding of Firebaugh is likely at flows of only 4,000 cfs.

3.0 Methods

This analysis considers a future state after completion of the Reach 2B Channel Improvements Project and Mendota Pool Bypass. This scenario also assumes improvements to channel capacity facilitated by seepage mitigation, setback levees, the Mendota Pool Bypass, and associated structures. It does assume that Friant Dam, Chowchilla Bypass, and Mendota Pool operations follow similar logic as they do at present or as required in the 1969 Operations Manual. The scenario does not include Buffer Flows (supplemental flows augmenting Restoration Flows), groundwater banking, Unreleased Restoration Flows, or Recapture & Recirculation programs.

This modeling effort is an update of a draft analysis conducted in 2009 using CALSIM and monthly flow data (SJRRP, 2009). Instead of being restricted to CALSIM's monthly time–steps, the San Joaquin Basin was modeled in CADSWES Riverware software for this present study. The same 82–year historical basin runoff record (i.e. inflow into Millerton Lake) that is utilized by CALSIM served as the basis for the daily flow modeling in Riverware (Vandegrift, 2012). Daily flow data from Riverware were then manipulated in a Microsoft Excel Spreadsheet, which took into account additional operational steps that would be present once the Mendota Pool Bypass is constructed and serves as a quality assurance step for the SJRRP Daily Flow Model output.

Additionally, five synthetic years with deliveries to the SJREC from Millerton Lake to satisfy the Exchange Contract were added into the Excel flow record. These 5 years simulate a future of greater delta pumping constraints or climate change. The modeling is based upon the best available data. However, the only instances of deliveries to the SJREC from Millerton Lake occurred in 2014 and 2015, and as such there is a lack of sufficient hydrology data to apply in the model to account for SJREC deliveries. Therefore, five synthetic years were generated in order to provide an understanding of how fish entrainment would be affected by these deliveries (See Section 3.3).

The final step was to analyze the impact to emigrating juvenile Chinook salmon (*Oncorhynchus tshawytscha)* and juvenile steelhead trout (*Oncorhynchus mykiss)*. This was accomplished by multiplying the ratio of flow volume leaving Reach 2A that is diverted into Mendota Pool by the fraction of fish population that emigrates in a given month. Two emigration timing curves were developed for Chinook salmon, one for spring–run and another for fall–run. An additional timing curve was developed for Steelhead. The methodology is discussed in more detail below (Section 3.5)

3.1 Flow Analysis

The basis for the analysis of flows was a model of future operating conditions run in Riverware software. This SJRRP Daily Flow Model used CALSIM model rules of operation and incorporated many of the planned structures associated with the SJRRP. This model used as its basis of climatology the actual record of precipitation in the basin, from water years 1922 to 2003, and synthesized a future condition under which Restoration Flows were fully operational and unconstrained by channel conveyance.

The SJRRP Daily Flow Model output was then analyzed in an Excel spreadsheet. Flood flows were confirmed based on the model data, spurious hours-long flood flows (which the model

improperly characterized because of the time lag of water as it flows downstream) were omitted (see Table 3-1 below for more information on what constitutes a spurious flood flow), and additional operational constraints were placed on the model output and mass–balanced, to accurately portray Reach 3 channel capacity, the Mendota Pool Control Structure design flow, and Exchange Contractor demand.

The SJRRP Daily Flow Model output was refined as follows:

- Limiting combined flows into Mendota Pool from James Bypass and San Joaquin River to 4,500 cfs, based on Reach 3 design capacity of 4,500 cfs
- Limiting flood flows past the planned Mendota Bifurcation Structure to Mendota Pool to 2,500 cfs, based on the design capacity of Reach 2B and the Exchange Contract
- Limiting flood flows past the planned Mendota Bifurcation Structure to Mendota Pool to the demonstrated average SJREC demand at Mendota Pool by month based on Delta-Mendota Canal operations (1975–2012)
- Synthetically adding in five deliveries to the SJREC from Millerton Lake to satisfy the Exchange Contract in Critical–High and Critical–Low water year types, as occurred in 2014 and 2015 (see Section 3.3)
- The fraction of SJREC flows for Arroyo Canal were routed through the Mendota Pool Bypass, as the easiest operational path (although Arroyo Canal flows could also be routed through Mendota Pool)

3.2 Adjustment of Flood Flow Frequency

A quality control check of the SJRRP Daily Flow Model output revealed that it depicted significantly more instances of flood releases than in the historic record of Friant Dam operations. Consequently, more water was being routed into Mendota Pool than expected. Consultation with Todd Vandegrift, Reclamation Technical Service Center, who generated the model output, confirmed the model's logic was immediately releasing water once a threshold of reservoir inflow was exceeded yet before the most concurrent runoff forecast was consulted. Many of these instances occurred in February and March, were short in duration, and were modest in volume. In many cases the model's logic, which was applied in daily time–steps, ceased flood releases shortly after initiation after a new monthly water supply forecast had been received in the time–step model. There were other instances that appear as flood releases in the model output that are reasonably avoided in real–world practice. For example, advancing a Restoration Flow pulse in the schedule may remove the need for flood release as it could draw down the reservoir level and attain the required amount of storage. In addition, flood control operators anticipate future forecasts and would avoid short-duration and small volume flood pulses by not applying strict thresholds as done in the model. There are additional unmodeled factors that would contribute to lessening the frequency of flood flows, such as the daily availability of low cost water (e.g. RWA water or "Section 215" water) prior to flood releases.

The model's logic is highly deterministic and strict, and does not consider flood control operator judgement in regards to flood flows or the coordination process that precedes flow scheduling. Therefore, a set of criteria were developed to omit these small flood flows in the model output (Table 3–1). For simplicity, these omissions were not mass–balanced across the flow record; however, they were checked to determine that their omission would not cause the reservoir to

spill at a later date. Since the reservoir does not spill later than expected, the omission of these small flood flow volumes is not significant and does not necessitate performing a mass balance.

Table 3-1. Criteria for Omission of Flood Release in Daily Flow Model Output

Trigger for Omission	Additional Criteria for all instances
When flood release is less than 100 cfs or 2 TAF in total volume	Omission of flood release must not result in reservoir spill at a later date, and Any adjustment of Restoration Flow Schedule to minimize flood release must conform to SJRRP Restoration Flow Guidelines
When a small flood flow is released atop a large Restoration Flow (e.g. 300 cfs flood flow atop 4000 cfs Restoration Flow)	
When adjustment of a planned Restoration Flow schedule would remove need for flood release	
When flood release is the result of elevations above a threshold days before a new monthly water supply forecasts	

Omission of these small modeled flood flows resulted in the average annual frequency of flood flows being reduced from 6.2% to 5.4% of days, and the average annual volume of flood flows being reduced from 9.2% to 8.6% of the total annual runoff. The principal effect of these omissions was upon the February and March hydrographs, and involves four Water Year Types — Normal–Wet, Normal–Dry, Dry, and Critical–High. This adjustment provides a more realistic analysis, and the analysis of a fish screen then proceeded with this modified model output. Unfortunately, daily observed operations data is not available for the full 1922-2003 record. A future analysis could use a reduced period of record and observed data, but herein a longer dataset was desired to capture a broader range of hydrology.

3.3 Exchange Contractor Flows

In 2014 and 2015, releases from Friant Dam were required to meet the conditions of the Exchange Contract for the first time. These releases were unprecedented in the record and were originally not part of the SJRRP Daily Flow Model. To account for this, synthetic SJREC deliveries were added to the flow record: a 270 thousand acre–feet (TAF) release for the SJREC in Critical–Low water years (1 in the 82–year record) and a 65 TAF release during Critical–High years (4 in the 82–year record). Critical-High and Critical-Low water year types were selected because these were the water year types for 2014 and 2015 when the only deliveries to SJREC from Millerton Lake have occurred in the record (i.e., historical occurrence of two years since the dam was built). The five synthetic years (an additional three years over the historical record), which is based on the occurrence of Critical-High and Critical-Low water years in the historical record, account for a future of greater delta pumping constraints and/or climate change. The timing and pattern was derived from the actual SJREC releases in 2014 and 2015. Losses between Friant Dam and Mendota Pool were not accounted for, but this made no difference to

the analysis since no other water was present in Reach 2 during SJREC releases. These deliveries were not mass–balanced — in other words, the commensurate amount of water was not subtracted from Millerton Lake which would have impacted how the model operated. This mass–balancing was omitted for practicality reasons. The primary effect of this omission is that flood flows will be slightly over–predicted over the 82–year model run, especially in the subsequent year after a synthetic SJREC delivery. If the reservoir has a substantial spill on subsequent years, or if the subsequent years after an Exchange Contractor delivery are so dry as to not have flood releases, the consequences of the lack of mass–balancing are diminished.

Exchange Contractor releases were scheduled in the adjusted SJRRP Daily Flow Model to begin on May 15 on Critical–Low water years and July 15 on Critical–High water years. This mimics the schedule that was actually used in 2014 (May 15th for a 270 TAF release from Friant Dam) and 2015 (July 15 for a 65 TAF release from Friant Dam). It should be noted that 2014 was a Critical–High year, but had a larger release than the subsequent 2015 Critical–Low year. These volumes are intentionally large so that they produce a liberal estimate of SJREC deliveries and a corresponding conservative estimate of fish entrainment. In fact, there may not be adequate stored water in Millerton Lake to fill such deliveries.

3.4 Mendota Pool Demand

Modeled flood flows into Mendota Pool were capped by the predicted water demand of the SJREC. When supply exceeded demand, surplus San Joaquin River water was routed through the Mendota Pool Bypass. This test assumed water from James Bypass would be used first to satisfy Mendota Pool demand, with water from the San Joaquin River second; thus, if James Bypass water fully saturated demand, no water from the San Joaquin River would be routed to Mendota Pool. To develop a demand curve, a record of SJREC operations from 1975 to 2012 was utilized. Demand at Arroyo Canal (i.e. SLCC) based on a 1999-2014 record was removed from the SJREC total to determine the draw at Mendota Pool. Arroyo Canal consists of approximately 20% of SJREC's demand. The average monthly demand over the 1975-2012 period was selected. Demand by month is depicted in Figure 3–2. Demand was treated as a block throughout the month (i.e. not ramped up or down by day).

3.5 Salmon Emigration and Timing

The underlying assumption throughout this report is that the percentage of flow diverted to Mendota Pool is proportional to the fraction of fish population diverted to the pool. This approach has been utilized successfully in estimating salmon entrainment on Idaho's Lemhi River (Walters et al 2012). The multiple small points of entrainment on the Lemhi River are different than the single large point of entrainment analyzed here. It is acknowledged that this is a simplified assumption that is adopted for modeling efficiency and based on the lack of an available salmon emigration model. Factors such as sweeping velocity, head differential, and other hydraulic parameters will affect fish movement at bifurcations. Modeling these parameters would require significantly longer than the time available to do this analysis.

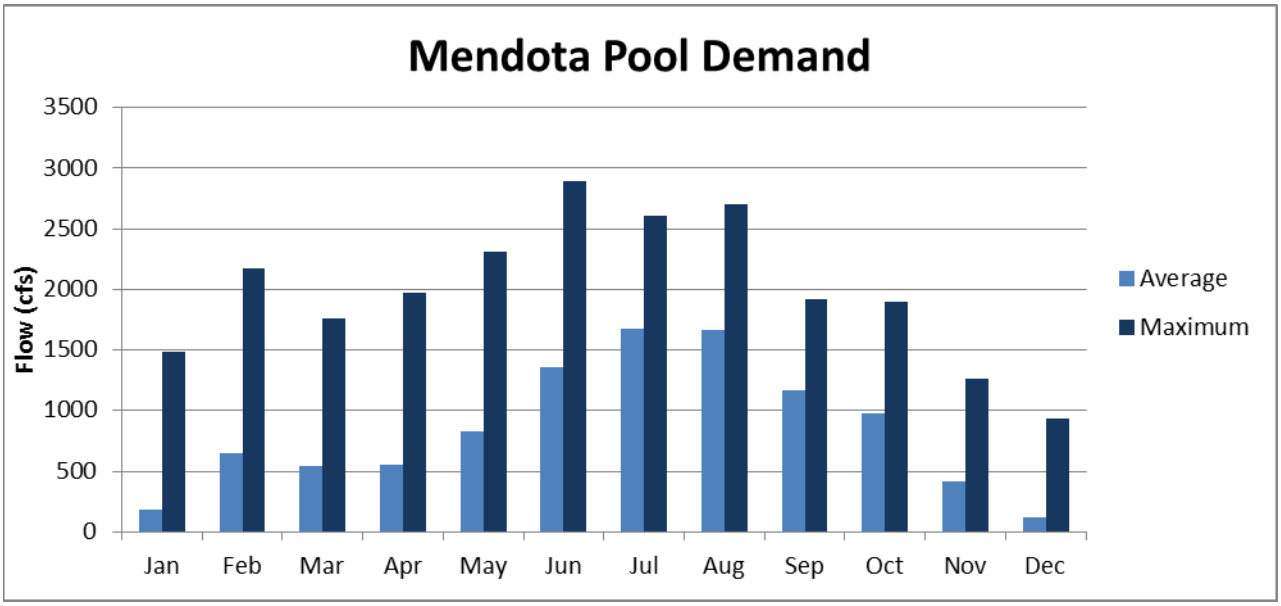


Figure 3-1. Mendota Pool Demand Curve Used to Limit Flood Flows to Mendota Pool

The previous Mendota Pool Fish Screen Analysis, a draft 2009 report conducted by SJRRP, used a basic presence/absence model, where juvenile salmon were present January through June, and absent otherwise. The current analysis is improved in that it does not assume that fish are evenly distributed temporally during all months that fish are present.

To generate a more detailed pattern of emigration for Chinook salmon, emigration timing from the SJRRP Minimum Floodplain Habitat Area report were utilized (SJRRP 2012), as there is not enough fish migration data available on the San Joaquin River, and none of it is at flows representative of future Restoration Flows. Figure 5 and Figure 8 of that report provide "pulse emigration" curves for fall–run and spring–run Chinook salmon respectively. These pulse emigration curves paired capture data with flow to determine the likelihood of fish emigration should there be a pulse in flow, thereby removing the bias that flow has upon fish movement. This correction for flow produces an independent variable of emigration, thereby making the curve of emigration timing suitable for this analysis.

Fall–run curves in the Minimum Floodplain Habitat Area report were generated from catch data on the Stanislaus River, roughly 100 miles north of the San Joaquin River. Spring–run curves were generated from catch data on the Feather River (200 miles north of the San Joaquin) and adjusted using a capture efficiency model from the Stanislaus. This approach was tested on the Mokelumne River, adjacent to the Stanislaus, and found to be a valid approach in correcting for geographic distance (SJRRP 2012). Both fall–run and spring–run emigration curves derived from the Minimum Floodplain Habitat Area report also incorporated adjustment to SJR river mile 234, just below the downstream limit of the spawning areas. This is approximately 28 miles upstream of Mendota Pool. The Stanislaus and Feather River data were used as they represent the nearest most complete dataset currently available.

The daily data from these two pulse emigration curves were then smoothed with a 30–day moving average filter to generate monthly emigration curves (Figure 3–2).

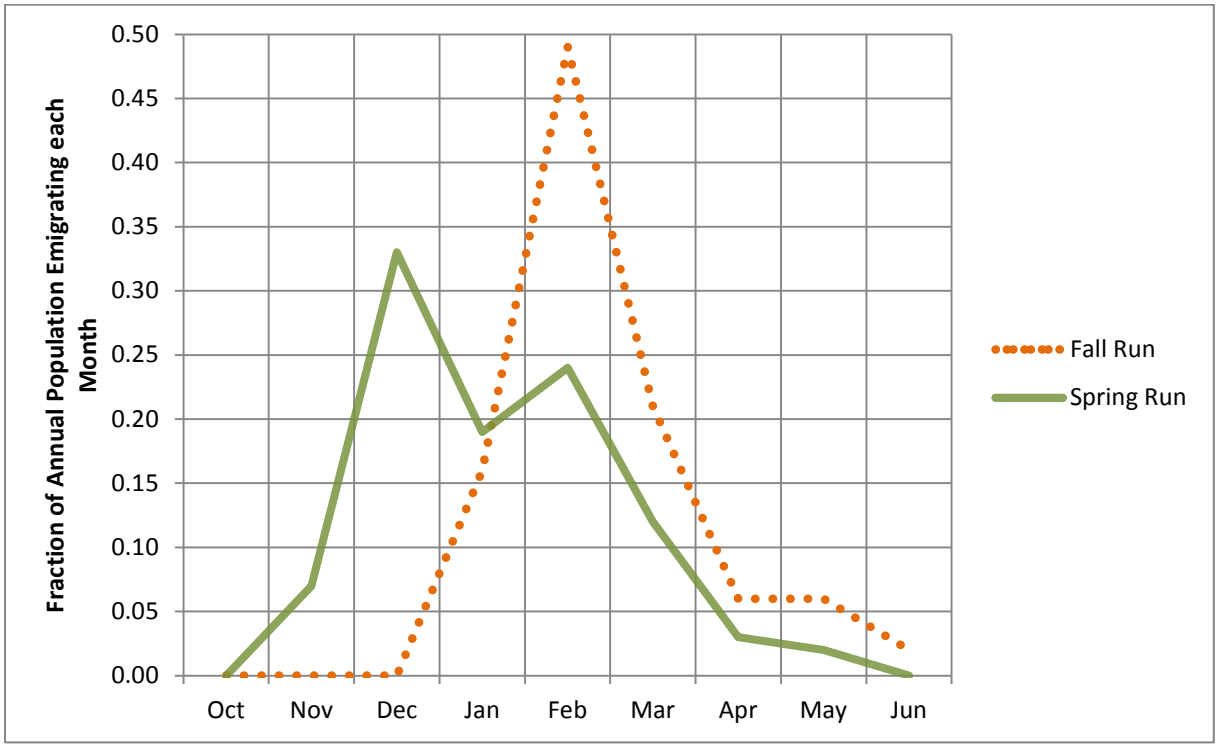


Figure 3-2. Initial Pulse Emigration Curves (SJRRP 2012) from Minimum Floodplain Habitat Area report, after smoothing

While there is currently no spring–run capture data from the San Joaquin River, there are two years of fall–run data from which to test this hypothetical emigration curve. In 2014, capture was conducted February 26 through May 8th, in 2014 (2393 captures), and February 14 through May 13, 2015 (625 captures). In both years, fry were captured immediately upon the start of the capture period, indicating that juveniles were present in mid–February. Additionally, flows were nearly constant during both periods, removing any effect of flow velocity upon a pulse emigration strategy. A monthly summary of data is presented in Table 3-2.

Table 3-2. Capture data of fall–run Chinook salmon in the San Joaquin River.

	Fraction of Captures 2014	Fraction of Captures 2015
February (partial)	.08	.24
March	.38	.56
April	.47	.16
May (partial)	.07	.04

Consulting with professional fisheries biologists (Portz pers. comm.) indicated that 2014 capture data was more representative of what is expected in the future for fall–run salmon due to the larger sample size and more normal water temperatures. Compared to the initial model (Figure

3–2), San Joaquin River capture data peaks later in the year. This difference is in line with recent observational trends (including a later onset of upstream migration of adults). Based on this capture data, the location of fish captures (which were upstream of SJR river mile 234), and professional judgment, the initial fall–run pulse emigration model was substantially modified by translating the curve back (delaying by 24 days) and adjusting the skewness of the curve (subtracting a combined 26% of the population from February and March, and adding it to the curve in April). Additionally, the June and July emigrants were curtailed due to the expected lethality of water temperatures during those months. This implies a peak fall–run emigration of April 4th with 95 percent of the population emigrating from February 1 through May 31. These modifications of the fall–run emigration pattern more closely follow the 2014 capture data in Table 3–2. The 2014 capture data however, does not cover the entire emigration period. Thus, it was used only to adjust the previously developed emigration curves, and not as the basis for an emigration curve.

Adjustment of the spring–run curves had no local capture data to rely upon, so the initial curve (Figure 3–2) was adjusted more modestly. The curve was translated back in the season to the same degree as indicated by the fall–run capture data (delaying by 24 days) (Portz pers.comm.) and the bimodal peaks of the curve were mellowed by moving 8% of the population (area under the curve) from the January peak to February, March and April. This results in a more bell-shaped (i.e. Gaussian) curve for spring–run salmon. Though there is biological significance to this bimodal structure (i.e. early and late emigration strategies), the intent was to reduce the influence of this characteristic because of the uncertainty in the precise timing. The subsequent analysis then becomes less sensitive to errors in the fish emigration curves. Figure 3–3 and Table 3–3 represent the adjusted juvenile Chinook salmon emigration models used for this analysis.

The emigration pattern presented in Figure 3–3 is generalized for Reach 1 and 2a where the majority of fry are expected to be found. As the fry mature, they are expected to disperse downstream into Reach 2B and Mendota Pool. It is recognized that the precise pattern of emigration may shift slightly later in the season for a given point lower in the river; however, this minor variance was not accounted for in the analysis. The influence of such a shift is within the uncertainty of the model, therefore no attempt was made to fine–tune a relatively coarse assumption.

Many assumptions went into the creation of the fish emigration curves. Please see Section 5.5 for a sensitivity analysis on different fish emigration curves.

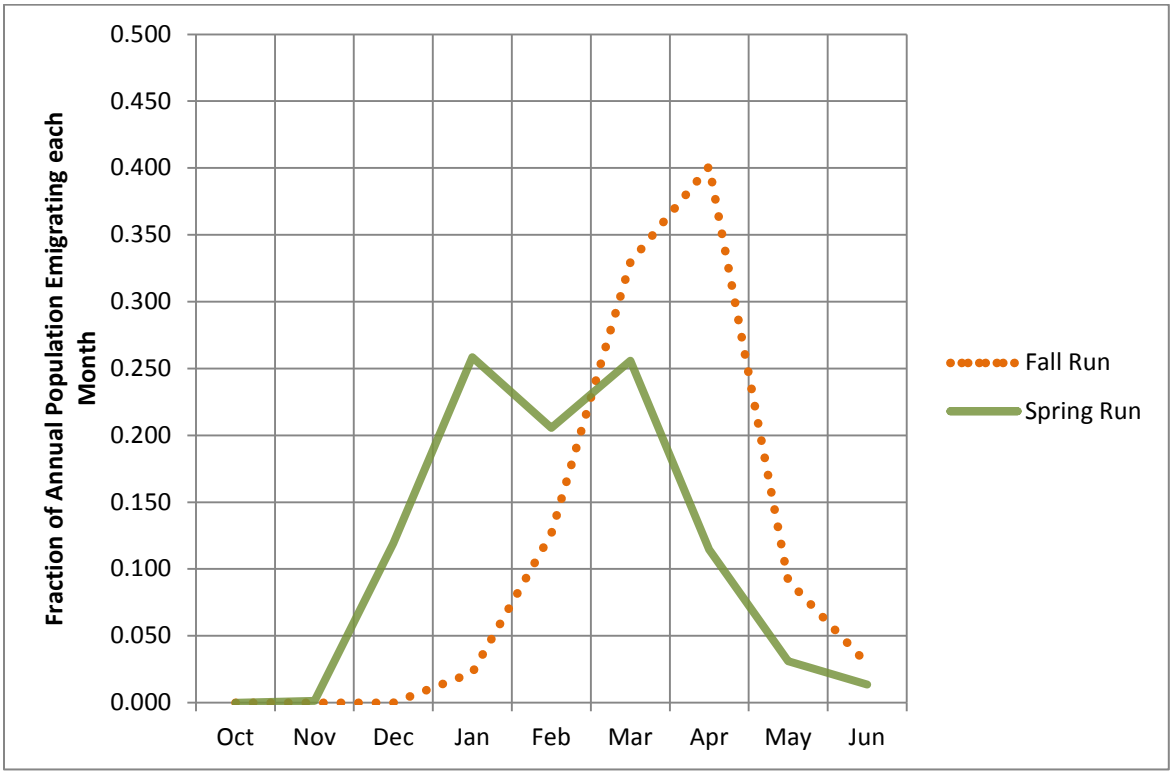


Figure 3-3. Model of Fraction of Emigrating Salmon Population by Month used in this analysis

Table 3-3. Table of Fraction of Emigrating Salmon Population by Month

	Fall–run Emigration Pattern	Spring–run Emigration Pattern
October	0.00	0.00
November	0.00	0.00
December	0.00	0.12
January	0.02	0.26
February	0.13	0.21
March	0.33	0.26
April	0.40	0.11
May	0.09	0.03
June	0.03	0.01

3.6 Steelhead Trout Emigration and Timing

The development of emigration curves for steelhead proceeded in a similar fashion to Chinook salmon. The analysis started with Mokelumne River steelhead capture data from 2011-2014 (reference). Multiple trap efficiency tests (approximately 10/year) were conducted for each Rotary Screw Trap (RST) from December-June on the Mokelumne River. Standard mark-recapture ratios were used as measurements of trap efficiency. Between 2011-2014, trap efficiencies ranged from 0.2% to 22.7% and averaged 7.4%. Mokelumne River Fish Hatchery and naturally produced Chinook salmon were used for the trap efficiency tests. This raw data, which is adjusted for trap efficiency, is shown in Table 3-5 below.

This raw data was first smoothed, and then compressed by 24 days to reduce the emigration period, as expected on the San Joaquin River due to higher temperatures (D. Portz, pers. Comm.). As with the salmon analysis above, the intent was to reduce the influence of sharp peaks in the data because of the uncertainty in the precise timing. The resulting analysis then becomes less sensitive to errors in the fish emigration curves.

1) The data was smoothed by first creating a smooth distribution of the average fraction of captures (column 4 of Table 3-4) into 6 day increments (5 periods per month). For example, the 4% of average captures found in February was assumed to occur with 0.2% in the first 6 days of February, 0.4% in the next 6 days, 0.7% in the next 6 days, 1.1% in the next 6, and finally 1.7% in the last section of February. This distribution was roughly linearly interpolated from the average fraction in Table 3-5 below, assuming a more Gaussian distribution of fish migration. It is shown in Column 4 of Table 3-6 below.
2) Secondly, the data was further smoothed by calculating a running average. For example, the adjusted % of capture assumed in the first 6 days of March was the sum of the % from the last 2 periods of February plus the first 3 periods of March. This is shown in Column 5 of Table 3-5 below.
3) Thirdly, the smoothed data was shifted or compressed, eliminating any expected fraction of steelhead in late January or early February. This was done to account for temperature differences between the Mokulumne and the San Joaquin Rivers in discussion with fisheries biologists (D. Portz pers. Comm.). Figure 3-4 below shows the compression.

For comparison, Figure 3-5 below shows the original average fraction of steelhead captured from the Mokelumne River compared to the smoothed, compressed dataset used for this analysis. The overall effect is a compressed fish emigration curve. The San Joaquin River curve used for the rest of this analysis demonstrates a higher peak than the data from the Mokelumne as a result of the distribution step, step 1 above.

Table 3-4. Capture data of Steelhead in the Mokelumne River.

	Fraction of Captures 2011	Fraction of Captures 2013	Fraction of Captures 2014	Average Fraction
February	.006	.060	.053	.040
March	.012	.232	.228	.157
April	.113	.322	.402	.279
May	.510	.364	.217	.364
June	.359	.020	.101	.160
Total Individuals for the Year	337	354	189	—

Table 3-5. Smoothing of Capture data of Steelhead in the Mokelumne River.

Month	Period in Month	Average 2011-2014 Mokelumne River Fraction Captured	Distributed Steelhead Fraction Captured	Smoothed Fraction Using running average	Smoothed Fraction Steelhead Captured by Month
Feb	2	0.041	0.002	0.003	0.044
	2.2		0.004	0.005	
	2.4		0.007	0.008	
	2.6		0.011	0.012	
	2.8		0.017	0.017	
Mar	3	0.157	0.022	0.021	0.157
	3.2		0.026	0.026	
	3.4		0.031	0.031	
	3.6		0.036	0.036	
	3.8		0.042	0.042	
Apr	4	0.279	0.047	0.047	0.277
	4.2		0.052	0.051	
	4.4		0.056	0.056	
	4.6		0.06	0.060	
	4.8		0.064	0.063	
May	5	0.364	0.067	0.067	0.351
	5.2		0.07	0.070	
	5.4		0.073	0.073	
	5.6		0.076	0.073	
	5.8		0.078	0.069	
Jun	6	0.159	0.067	0.060	0.166
	6.2		0.05	0.047	
	6.4		0.028	0.032	
	6.6		0.014	0.018	
	6.8		0	0.008	

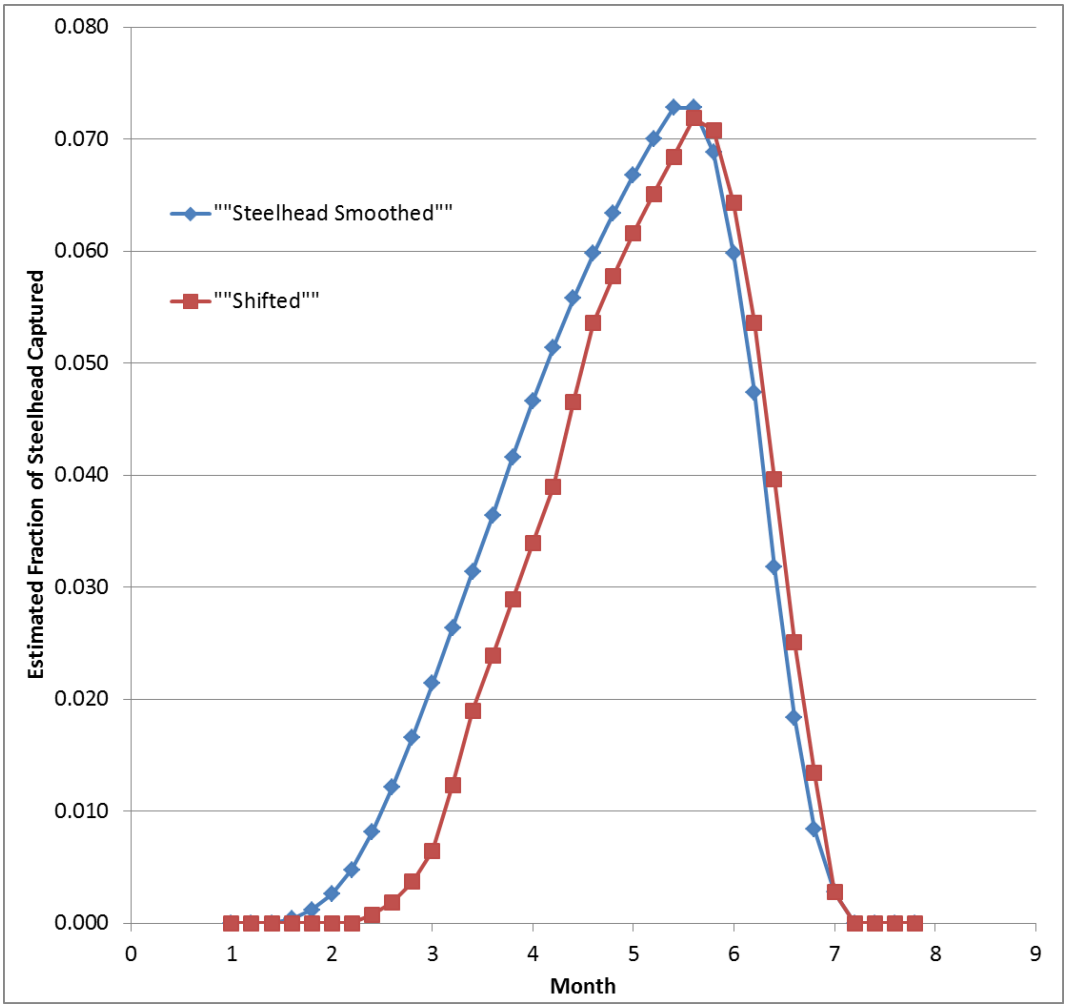


Figure 3-4. Smoothed Mokelumne River Data shifted / compressed to account for San Joaquin River temperature differences

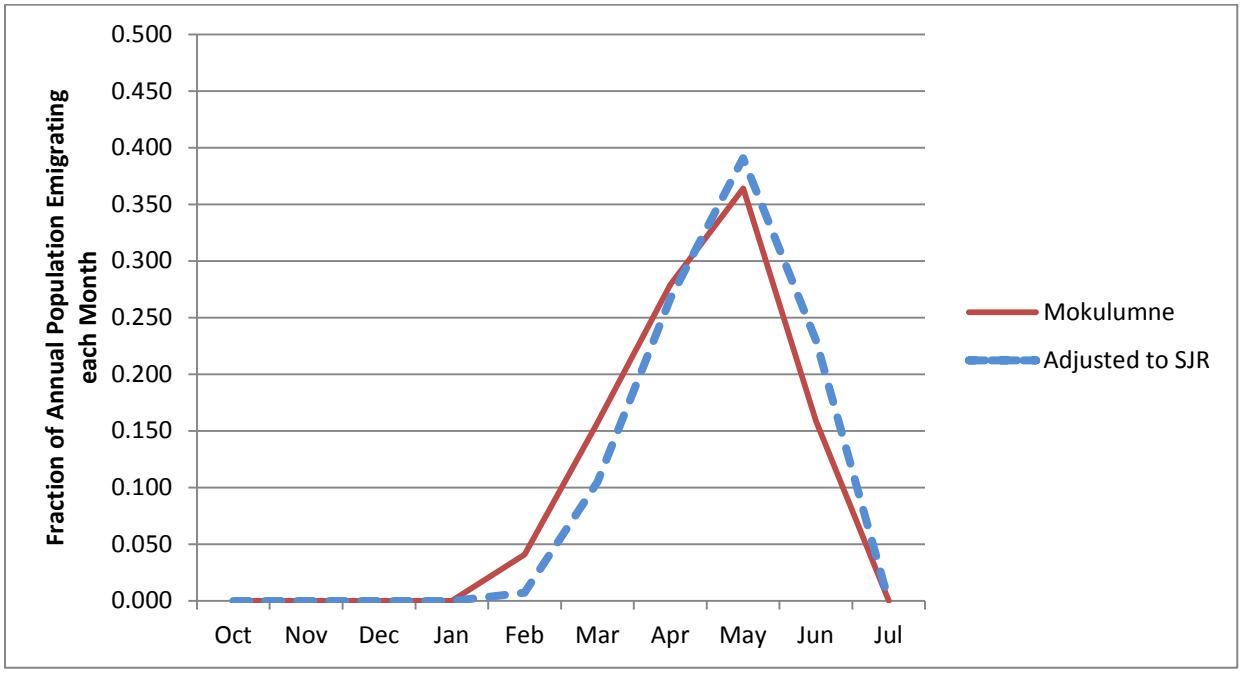


Figure 3-5. Monthly Distribution of Steelhead from Mokelumne River Data and then Adjusted to San Joaquin River curve used in this analysis.

4.0 Results

4.1 Results Summary

Modeling results show that flows into Mendota Pool are primarily dictated by when Friant Dam is releasing flood flows, and to a smaller degree by releases to meet the Exchange Contract. The relative proportion of volume flowing into Mendota Pool as compared to other flowpaths leaving Reach 1 (i.e. the Chowchilla Bypass and the Mendota Pool Bypass) was combined with a model of juvenile fish emigration to determine the proportion of juvenile fish that would likely be entrained into Mendota Pool. This showed that flood flows, particularly precautionary flood flows during February and March, result in the majority of juvenile salmon entrainment. The effect upon spring–run Chinook salmon is roughly equivalent to the effect upon fall–run Chinook salmon, with an annual average of 3.47% of the juvenile fall-run population and 3.96% of the spring-run juvenile fish population predicted by this analysis to be entrained in Mendota Pool. All water year types contribute substantively to this aggregate entrainment, from Wet to Critical–Low. For steelhead, the average annual entrainment of the juvenile fish population predicted is 2.68%, with between 0.4 and 5.1% entrainment predicted in all water year types except Critical Low. As the steelhead emigration window extends into June, it overlaps with the Exchange Contractor releases that can occur in Critical Low and Critical High water years. Critical Low years have substantial entrainment percentages, as there are no Restoration Flows in Critical-Low water years, so any fish emigrating would be doing so in the water supply released from Friant Dam for the exchange contractors to Mendota Pool.

4.2 Frequency of Flows

Figure 4–1 below depicts the frequency of days where San Joaquin River water flows into Mendota Pool. Flows into Mendota Pool are dominated by two modes: 1) flood flows released by Friant Dam, and 2) delivery of water to Exchange Contractors from Friant Dam. The former can be further divided into: 1a) precautionary releases to increase reservoir capacity in order to attenuate expected runoff, and 1b) mandatory releases due to reservoir at or near capacity.

The greatest likelihood of flows into Mendota Pool occurs in February and July, where 18% and 12% of days respectively have significant flows into the pool. Figure 4–2 depicts the same information broken out by Water Year Type (See Appendix A for Water Year Type definitions). Here the preponderance of flood flows during the Exchange Contractor deliveries during May through September dominate the frequency, but only during Critical–High and Critical–Low water year types. Because Critical–High and Critical–Low water year types are relatively uncommon, their overall impact to the 82–year record is diminished. There were 16 wet years, 24 Normal–Wet years, 25 Normal–Dry years, 12 Dry years, 4 Critical–High years, and 1 Critical–Low year in the analysis set.

Note that flood flows tend to be bimodal, with early season flood flows in February and March, consisting mostly of precautionary releases, and late season mandatory flood flows in June through August. This pattern is most pronounced in Wet year types. The frequency of flows into Mendota Pool during Critical–High and Critical–Low years is the result of water releases for Exchange Contractors.

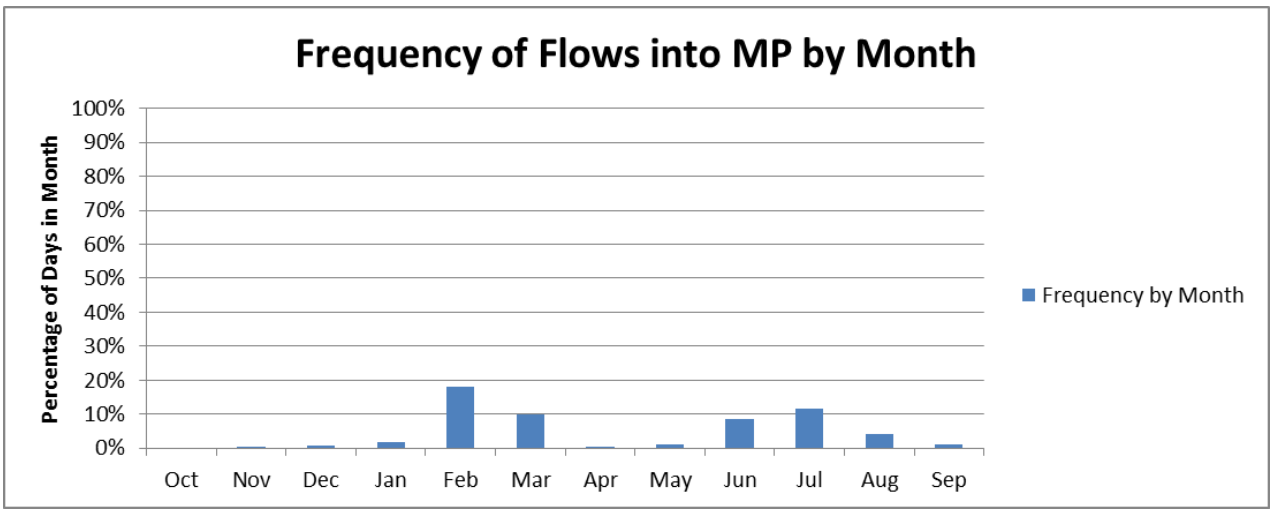


Figure 4-1. Frequency of Days with Flows into Mendota Pool

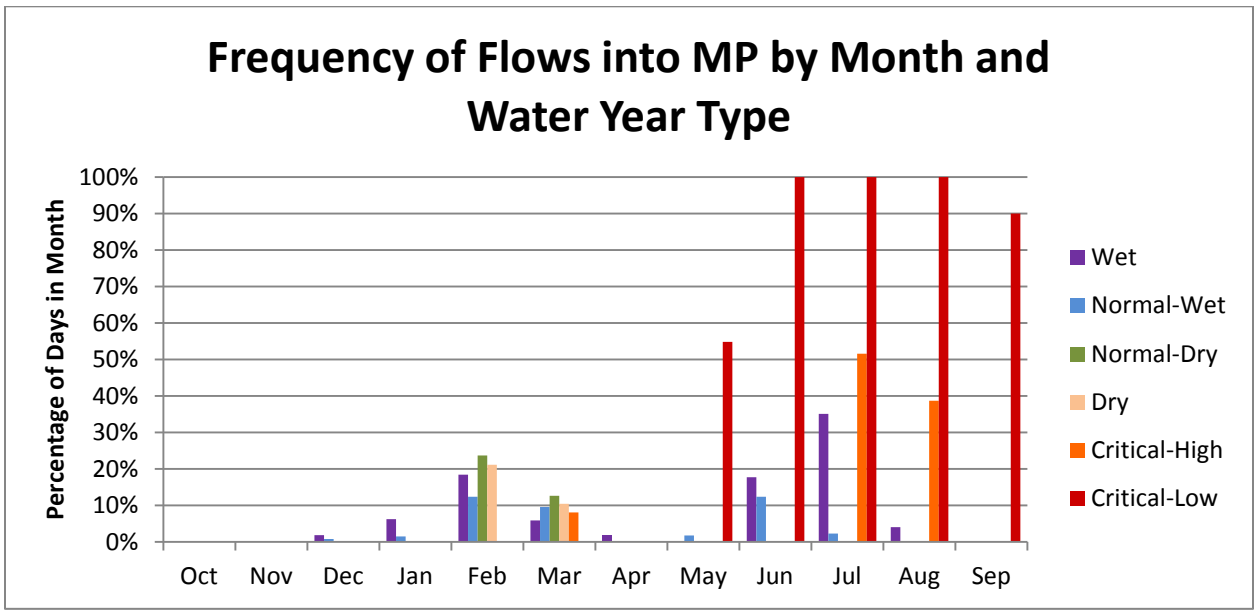


Figure 4-2. Frequency of Days with Flows into Mendota Pool by Water Year Type

Precautionary flood releases occur in the record every 3 ½ years on average, and with very few exceptions occur during February and March. These have occurred during all water year types except Critical–Low. Mandatory flood releases occur every 4 years on average, though not always on the same year that precautionary flood releases do. These typically occur during June and July, yet occasionally span from May through August in extremely wet years. All mandatory flood releases occur during Wet and Normal–Wet year types. Table 4–1 summarizes the approximate characteristics of floods that result in flows into Mendota Pool according to the Riverware modeling.

Table 4-1. Characteristics of Flood Flows (for flood over 3 days in length)

Month	Flood Return Interval	Mean # of Days of Flood	Water Year Types	Flood Type
Jan	27 years	16	Wet, Normal–Wet	Precautionary and Mandatory
Feb	3.5 years	18	Wet, Normal–Wet, Normal–Dry, Dry	Precautionary
Mar	3.9 years	15	Wet, Normal–Wet, Normal–Dry, Dry, Critical–High	Precautionary
Apr	82 years	8	Wet	Precautionary
May	16 years	8	Wet, Normal–Wet (Critical–Low for Exchange Contractor Releases)	Mandatory and EC Releases
Jun	5.9 years	18	Wet, Normal–Wet (Critical–Low for Exchange Contractor Releases)	Mandatory and EC Releases
Jul	4.3 years	17	Wet, Normal–Wet (Critical–High, Critical–Low for Exchange Contractor Releases)	Mandatory and EC Releases
Aug	12 years	15	Wet, Normal–Wet (Critical–High, Critical–Low for Exchange Contractor Releases)	Mandatory and EC Releases

4.3 Volume of Flows

The volume of flows that enters Mendota Pool varies by months and water year type (Figure 4–3). February averages about 6 TAF of volume into Mendota Pool, where March averages about 3 TAF, with this varying somewhat across water year types. Volumes vary broadly in May through September based on water year type, and can be as high as 58 TAF. Table 4–2 provides the average volumes across the modeling record for each month and water year type.

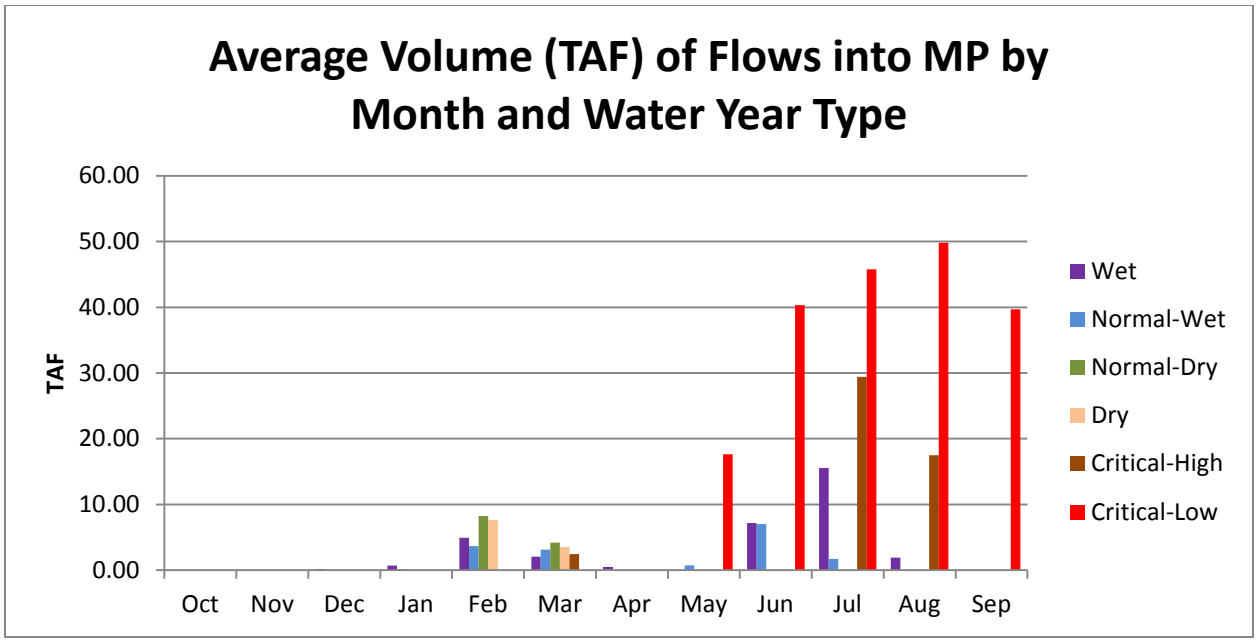


Figure 4-3 Absolute Volume of Flows into Mendota Pool by Water Year Type

Table 4-2 Volumes of Flows by Month (Volume into Mendota Pool / Total River Volume) in Thousand Acre Feet (TAF)

Month	Wet	Normal-Wet	Normal-Dry	Dry	Critical High	Critical Low
Oct	0 / 6.48	0 / 6.32	0 / 6.64	0 / 6.91	0 / 6.91	0 / 0
Nov	0 / 14.54	0.03 / 14.35	0 / 14.97	0 / 15.5	0 / 15.5	0 / 2.23
Dec	0.14 / 21.86	0.07 / 16.2	0 / 9.15	0 / 9.53	0 / 9.53	0 / 0
Jan	0.68 / 67.26	0.16 / 11.75	0 / 10.27	0 / 10.7	0 / 10.7	0 / 0
Feb	4.92 / 56.21	3.66 / 15.22	8.26 / 25.72	7.66 / 31.24	0 / 12.32	0 / 0
Mar	2.05 / 94.31	3.12 / 52.85	4.19 / 51.74	3.52 / 50.21	2.44 / 28.25	0 / 42.47
Apr	0.44 / 206.35	0 / 148.56	0 / 67.33	0 / 31.44	0 / 17.8	0 / 4.73
May	0 / 223.22	0.72 / 28.09	0 / 8	0 / 2.57	0 / 2.24	17.63 / 26.43
Jun	7.18 / 201.59	7.02 / 17.07	0 / 5.06	0 / 2.93	0 / 0	40.34 / 61.09
Jul	15.56 / 88.76	1.73 / 5.86	0 / 2.89	0 / 2.11	29.4 / 42.64	45.76 / 66.37
Aug	1.9 / 5.85	0 / 2.78	0 / 2.77	0 / 2.09	17.48 / 23.31	49.82 / 66.41
Sep	0 / 3.8	0 / 3.8	0 / 3.8	0 / 3.74	0 / 0	39.67 / 50.46
Total	33 / 990	17 / 323	12 / 208	11 / 169	49 / 169	193 / 320

Plotting the fractional volume of flow into Mendota Pool (Figure 4–4) shows a similar pattern to the frequency plot of Figure 4–1, though with greater amplitude. Figure 4–4 depicts the fraction of that entire water year's volume routed to Mendota Pool. Volume in July and August is higher in comparison to other months than its respective frequency, indicating that flows into Mendota Pool during this month tend to be larger (higher cubic feet per second). This is influenced by extreme flood events (i.e. 1969, 1982) that continued through the summer, and flow releases for the Exchange Contractors.

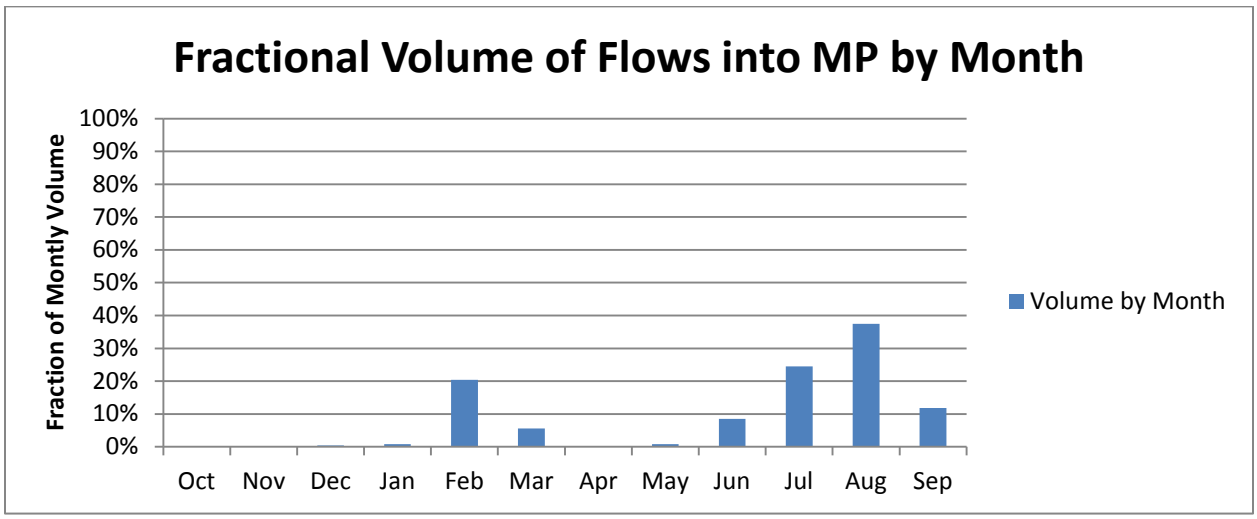


Figure 4-4. Fractional Volume of Flows into Mendota Pool

When broken out by Water Year Type, a more complex pattern emerges (Figure 4–5). Wet years have proportionally less of their volume released during February and March flood releases, whereas Normal–Wet, Normal–Dry, and Dry years have a fairly high proportion of their annual volume released in February flood flows. In nearly all cases, these February flows during non–Wet year types are mostly composed of precautionary flood releases. In many of those cases, subsequent months of lower precipitation did not result in actual spillway releases (i.e. mandatory flood releases).

Critical–High and Critical–Low water years are dominated by Exchange Contractor Releases, which constitute nearly all of the flow into Mendota Pool during those times, and only occur during the summer. Though the fractional volume of flows into Mendota Pool are conspicuous during Critical–High and Critical–Low water year types, their overall contribution is smaller because Critical–High and Critical–Low water years occur less frequently over the long–term record.

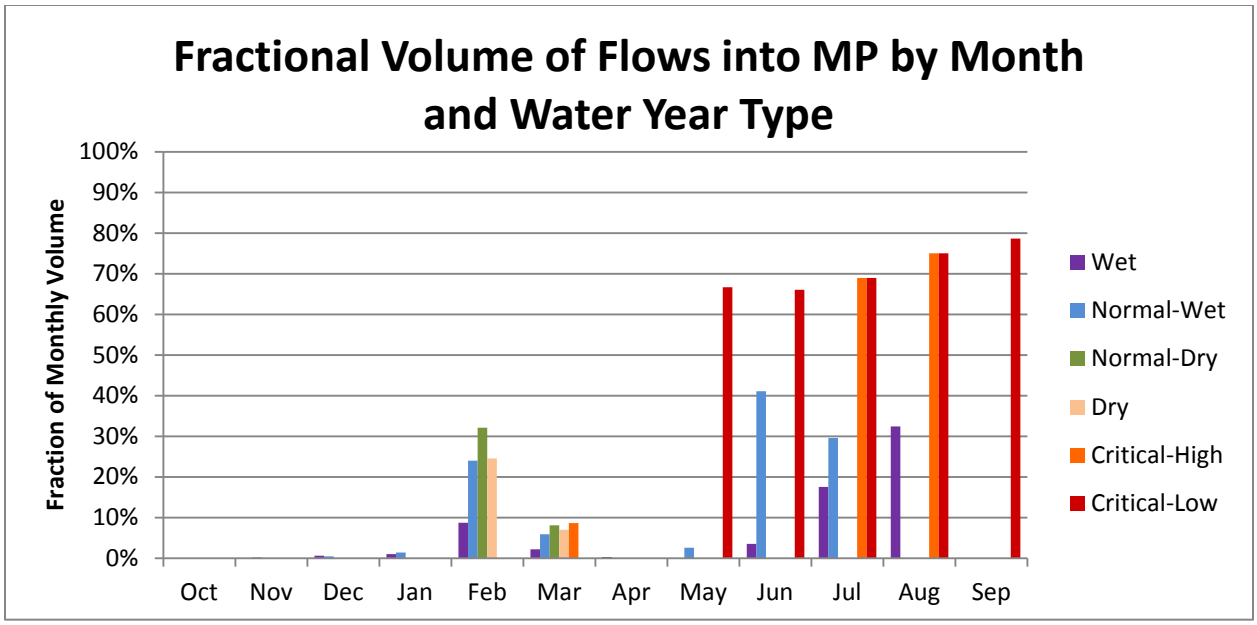


Figure 4-5. Fractional Volume of Flows into Mendota Pool by Water Year Type

Figure 4–6 shows the percentile distribution of Mendota Pool flow volumes. These are shown in absolute volume in units of thousand acre–feet. The median (50th percentile) of each and every month has zero volume, indicating that in a typical year there are no flows into Mendota Pool. The distribution is very positively skewed, with most of the volume into Mendota Pool in the 82–year model run being caused by large and infrequent events. In one out of twenty years (the 95th percentile), four months have greater than half their volume being directed to Mendota Pool. Conversely, in ten out of twenty years, no flows into Mendota Pool can be expected.

Table 4–3 shows the percentile fraction across all months. In ten out of twenty years (50th percentile), less than 1% of water flows into Mendota Pool. In one out of twenty years (95th percentile), 26% of annual flow total is routed into Mendota Pool.

Table 4–4 expands on Table 4–1, depicting percentile fraction of annual volume (expressed as a percentage as before) by month. There is virtually no flow into Mendota Pool in any month until percentiles climb to 80th. Beyond the8 percentile, there are rapidly increasing fractions of volumes into Mendota Pool for February, March, June, July, and August. Zeros are shaded gray for clarity.

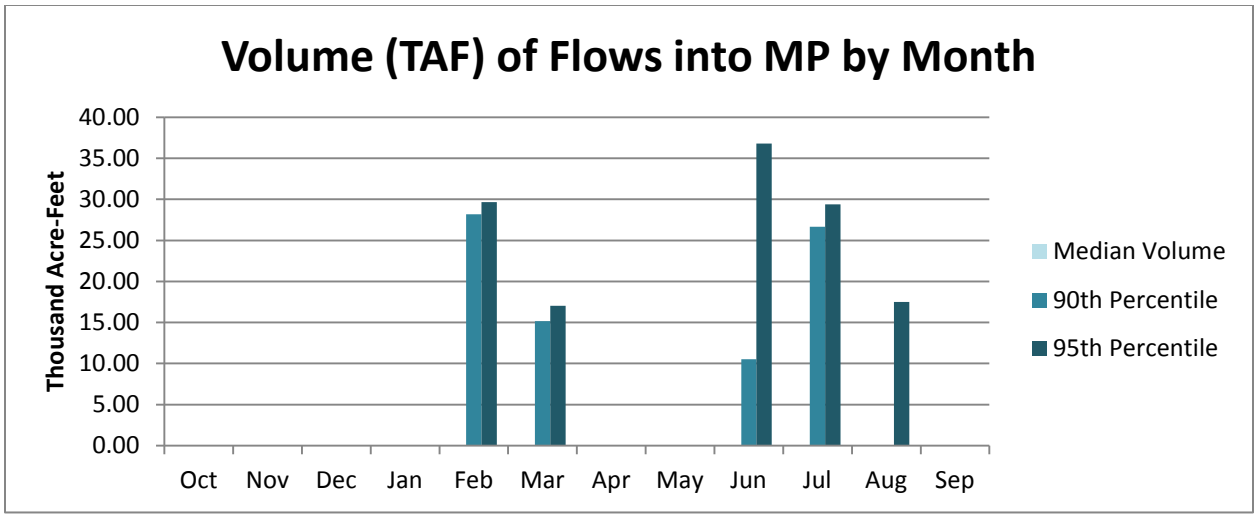


Figure 4-6. Volume of Flows (TAF) into Mendota Pool by Percentile

Table 4-3. Percentile of Fraction of Annual Volume into Mendota Pool for All Years

	50th Percentile	60th Percentile	70th Percentile	80th Percentile	90th Percentile	95th Percentile
All Years	<1%	2.8%	8.2%	14.3%	17.1%	25.6%

Table 4-4. Percentiles of Fraction of Monthly Volume into Mendota Pool by Month

Month	50th Percentile	60th Percentile	70th Percentile	80th Percentile	90th Percentile	95th Percentile
Oct	0%	0%	0%	0%	0%	0%
Nov	0%	0%	0%	0%	0%	0%
Dec	0%	0%	0%	0%	0%	0%
Jan	0%	0%	0%	0%	0%	0%
Feb	0%	0%	0%	30%	54%	65%
Mar	0%	0%	0%	6%	21%	25%
Apr	0%	0%	0%	0%	0%	0%
May	0%	0%	0%	0%	0%	0%
Jun	0%	0%	0%	0%	26%	56%
July	0%	0%	0%	6%	69%	87%
Aug	0%	0%	0%	0%	2%	75%
Sep	0%	0%	0%	0%	0%	0%

4.4 Estimating Salmonid Entrainment

We examined the benefit of a fish screen by looking at what entrainment would occur without a screen in place. The likelihood of entrainment of both fall–run and spring–run Chinook salmon was estimated by multiplying the fish emigration model by the proportion of volume into Mendota Pool in each month of the analysis across 82 years. This provided a representative estimate of the long–term probability of entrainment at Mendota Pool without a fish screen. It was assumed that fish were evenly distributed in the river flow and responded equally to both the rising and falling hydrograph. Lower volumes were assumed to have higher "concentrations" of fish, therefore the proportion of volume to Mendota Pool was used in lieu of absolute volume of flows. The result of this mathematical operation is a fraction of the juvenile salmon population that is entrained. This should not be confused with absolute numbers of fish entrained, as Wet years should have larger numbers of fish entrained than Dry, Critical–High, or Critical–Low years.

Figure 4–7 depicts the fraction of the annual juvenile Chinook salmon population that is likely to be entrained into Mendota Pool by month. The majority of entrainment is expected in February and March when both fish emigration and flow into Mendota Pool is relatively high. The percentage of the annual population that is expected to be entrained averaged across all months and water year types is 3.47% for fall–run Chinook salmon, 3.96% of spring–run Chinook salmon, and 2.68% for steelhead (Table 4–5).

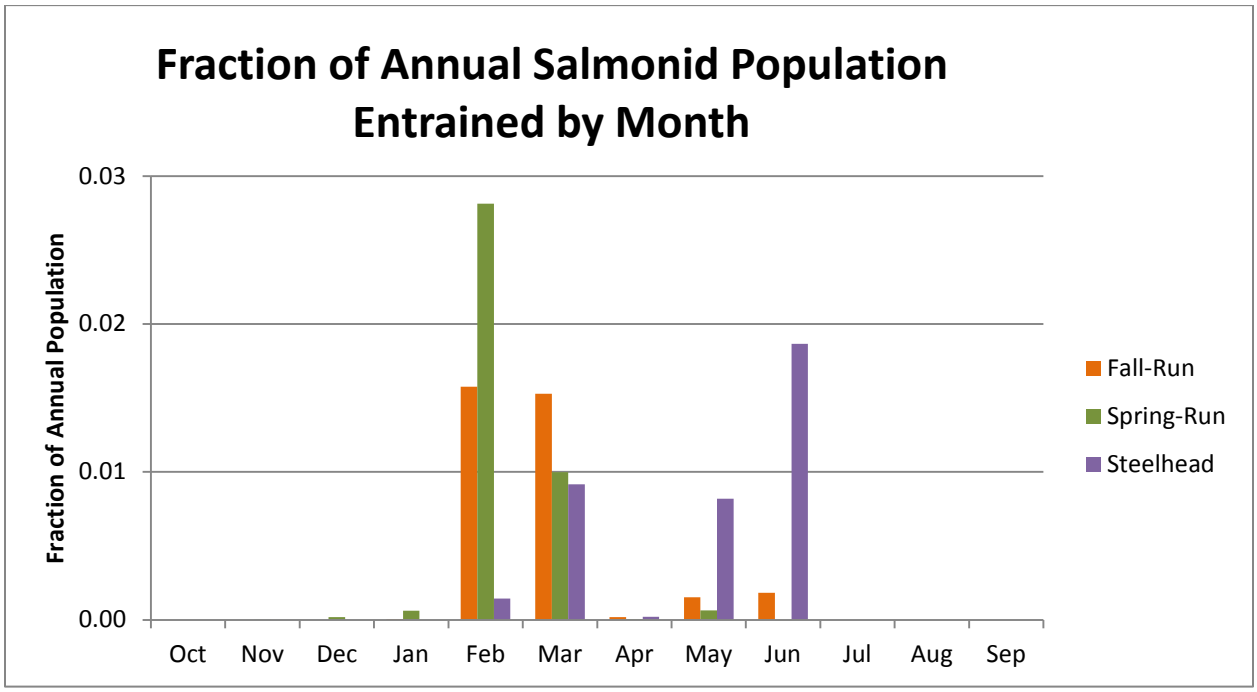


Figure 4-7. Fraction of the Annual Salmonid Population that is Likely to be Entrained into Mendota Pool.

Table 4-5. Salmonid Population Likely to be Entrained at Mendota Pool

	Fall–Run Chinook salmon	Spring–Run Chinook salmon	Steelhead
Percent of Annual Population	3.47%	3.96%	2.68%

When fish entrainment is broken out by Water Year Type (Figure 4–8 for fall–run, Figure 4–9 for spring–run Chinook salmon, and Figure 4-10 for steelhead) the importance of February and March flows becomes even more striking. The difference between these two figures and Figure 4–5 is primarily due to the absence of emigrating fish during summer and fall months. Entrainment during February and March flood releases is similar across Wet, Normal–Wet, Normal–Dry, and Dry water year types. Note the different vertical scale between the two figures. Unexpectedly, entrainment exceeds 0.03 or 3% of both the fall–run and spring–run populations in March in Critical–High years. These values are due to precautionary flood releases that occurred in the model run in 1976 when a Critical–High year followed a Normal–Wet water year. For steelhead, with their later migration timing, most of the entrainment occurs during deliveries to Mendota Pool in the summer rather than flood flows. The importance of the fish migration curve is pronounced for steelhead. As the steelhead emigration curve used has high amounts of juvenile steelhead moving to the ocean in May and June, releases for the Exchange Contractors water supply in drier years becomes important, and results in very high proportions of fish entrained in Critical-Low years when these occur

Table 4–6 shows entrainment by water year type. Values range from 2% to 5% depending on the water year type, with the exception of Critical–Low years with the synthetic Exchange Contractor water release in mid–May causing higher entrainment for fall-run and steelhead (8% and 41%). A Critical–Low year only occurred once in the modeling scenario and therefore had a relatively small impact upon overall entrainment. In interpreting these figures, it is important to differentiate between the fraction of annual fish population, depicted here, with number of individuals, which would certainly vary from one year to another.

Table 4–7 shows percentile fraction of annual fish population entrained by month. Compare to Table 4–4 which shows volumes of water, instead of entrainment. Only at the 80th percentile and above do two months, February and March, have notable entrainment. The impact of flows for Exchange Contractors in May and June is very small, <2% for both months combined at the 95th percentile. The first value is color–coded for fall–run with the second value for spring–run and the third value for steelhead; zeros are shaded gray for clarity. This table is particularly useful for understanding the difference between long-term average, which incorporates many years of zero entrainment, with episodic events. Finally, Figures 4–11 and 4–12 depict fish entrainment of both fall–run and spring–run juveniles as a yearly time series. Most years have no entrainment, while moderate entrainment punctuates the time series. The highest annual entrainment in the model run for Chinook salmon was 1932, when 22%, and 27% of fall–run and spring–run juveniles were entrained due to a protracted precautionary flood release occurring January through March. For steelhead, the highest annual entrainment in the model run was in 1977, the Critical-Low water year, when the model predicts 41% entrainment for steelhead juveniles if a year like 1977 occurs in the future.

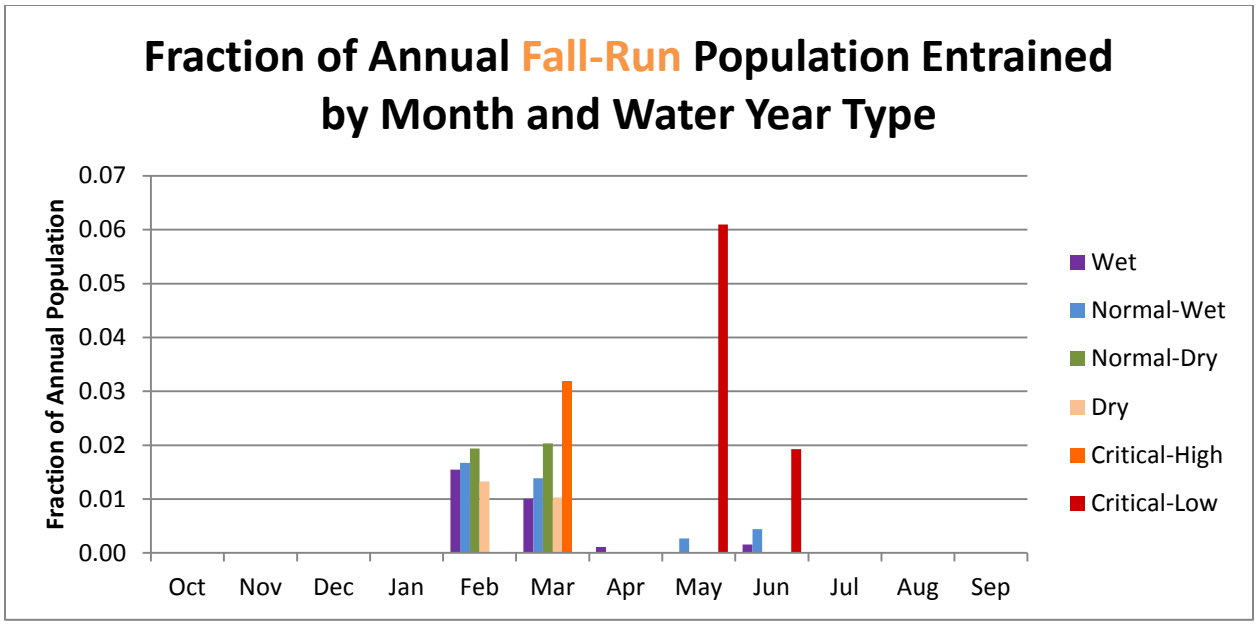


Figure 4-8. Fraction of the juvenile Fall–run Chinook Salmon Population that is Likely to be Entrained into Mendota Pool by Water Year Type

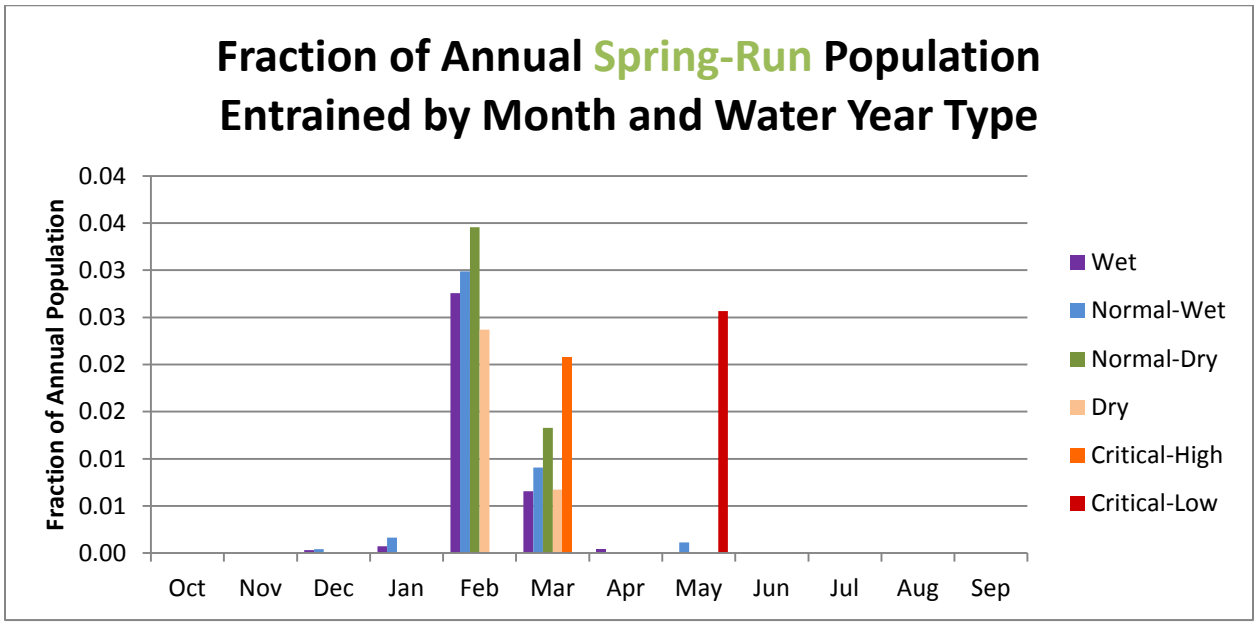


Figure 4-9. Fraction of the juvenile Spring–run Chinook Salmon Population that is Likely to be Entrained into Mendota Pool by Water Year Type

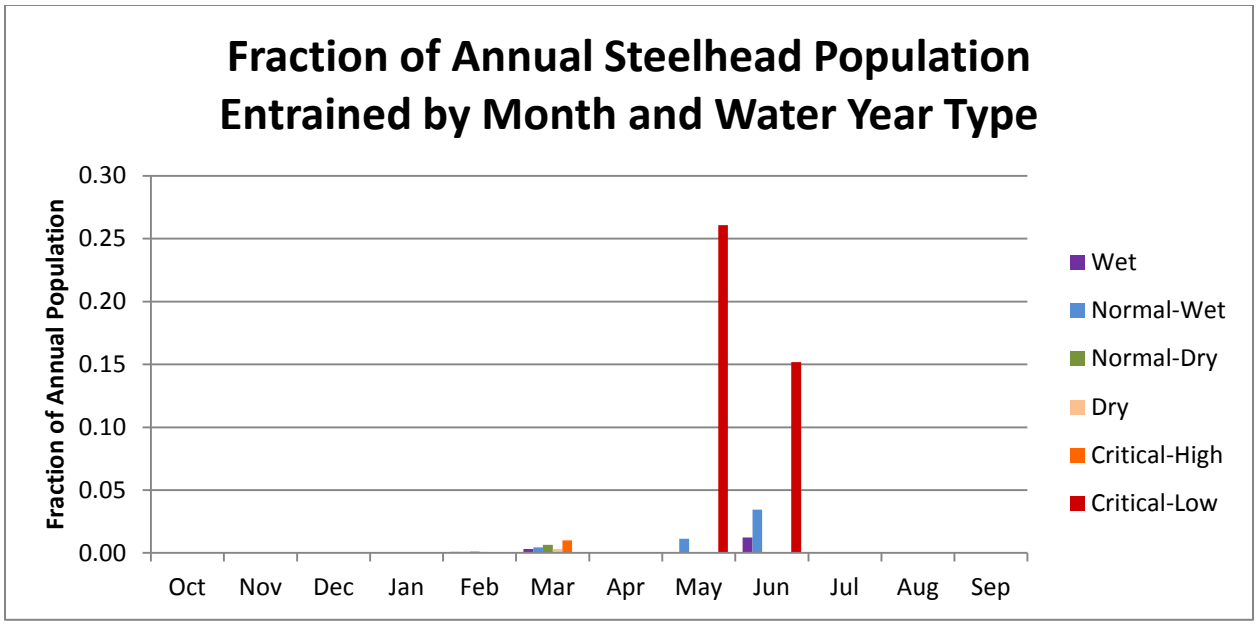


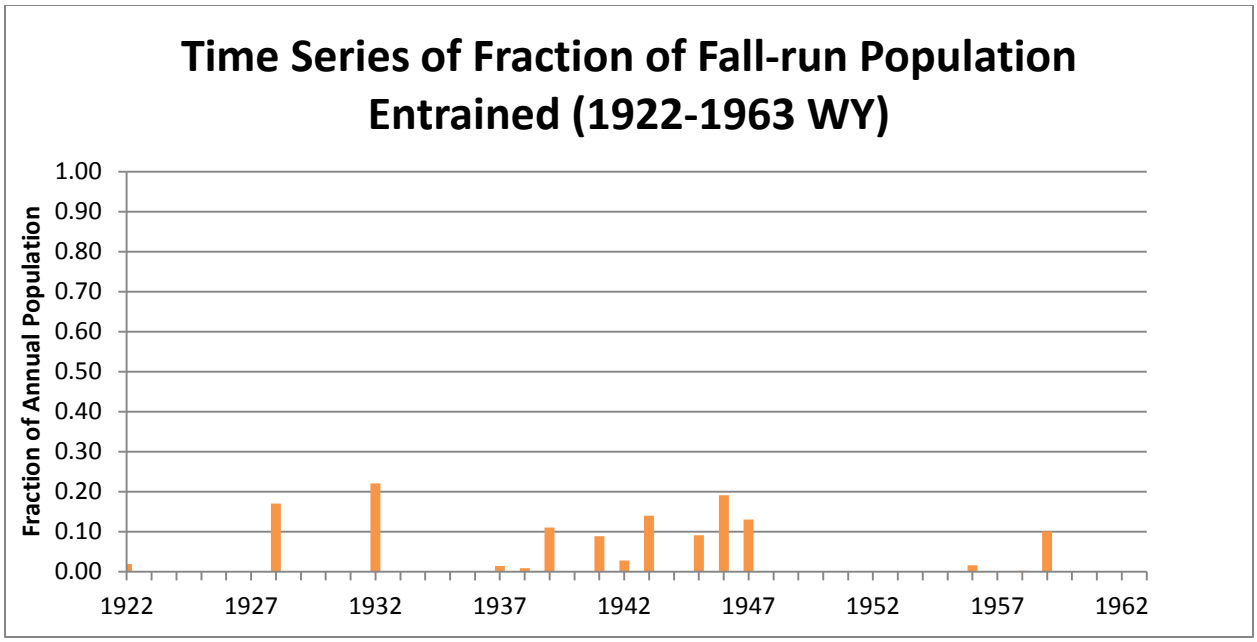
Figure 4-10. Fraction of the juvenile Steelhead Population that is Likely to be Entrained into Mendota Pool by Water Year Type

Table 4-6. Fall–run and Spring–run Chinook Salmon and Steelhead Population Likely to be Entrained at Mendota Pool by Water Year Type

Water Year Type	Number of Years in Model Run	Fall–Run Chinook salmon	Spring–Run Chinook salmon	Steelhead
Wet	16	2.8%	3.6%	1.7%
Normal–Wet	24	3.8%	4.2%	5.1%
Normal–Dry	25	4.0%	4.8%	0.8%
Dry	12	2.4%	3.0%	0.4%
Critical–High	4	3.2%	2.1%	1.0%
Critical–Low	1	8.0%	2.6%	41.3%

Table 4-7. Percentiles of Fraction of Fall–run and Spring–run Chinook salmon and Steelhead entrained at Mendota Pool by Month

Month	50th Percentile	60th Percentile	70th Percentile	80th Percentile	90th Percentile	95th Percentile
Oct	0%	0%	0%	0%	0%	0%
Nov	0%	0%	0%	0%	0%	0%
Dec	0%	0%	0%	0%	0%	0%
Jan	0%	0%	0%	0%	0%	0%
Feb	0%	0%	0%	4% / 7% / 0%	7% / 12% / 0%	8% / 15% / 0%
Mar	0%	0%	0%	2% / 1% / 1%	7% / 5% / 2%	8% / 5% / 3%
Apr	0%	0%	0%	0%	0%	0%
May	0%	0%	0%	0%	0%	0%
Jun	0%	0%	0%	0%	<1% / 0% / 6%	2% / 0% / 12%
July	0%	0%	0%	0%	0%	0%
Aug	0%	0%	0%	0%	0%	0%
Sep	0%	0%	0%	0%	0%	0%



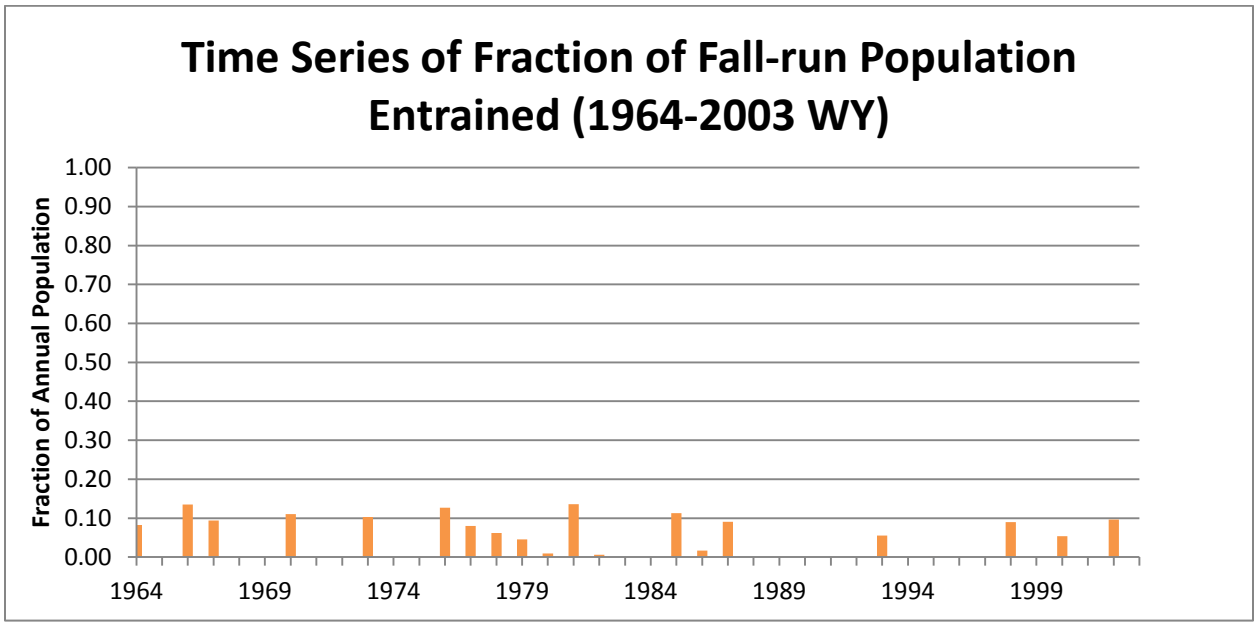
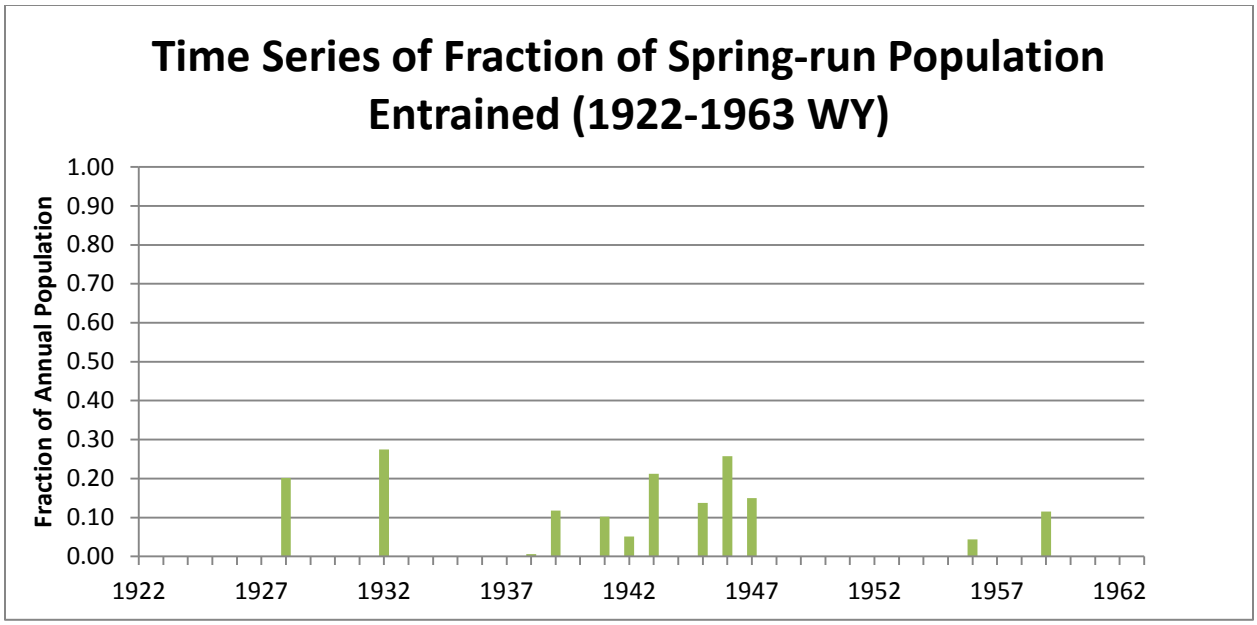


Figure 4-11. Time Series of Fraction of Fall–run Chinook Salmon Population Entrained (set 1: 1922–1963, set 2: 1964–2003)



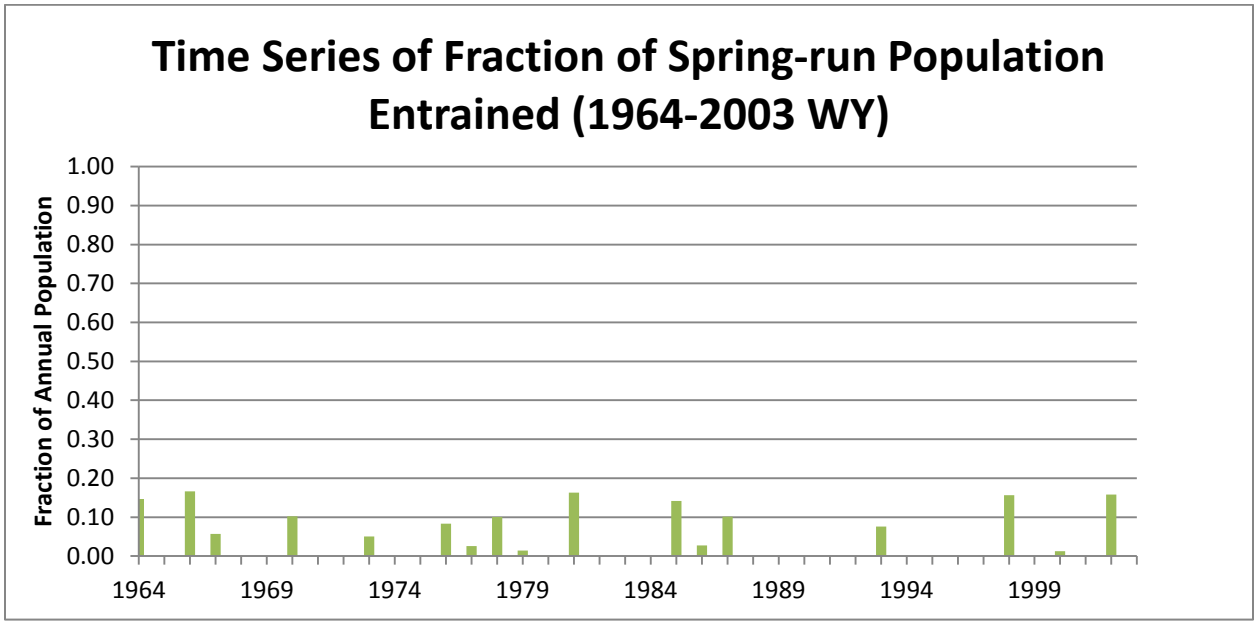
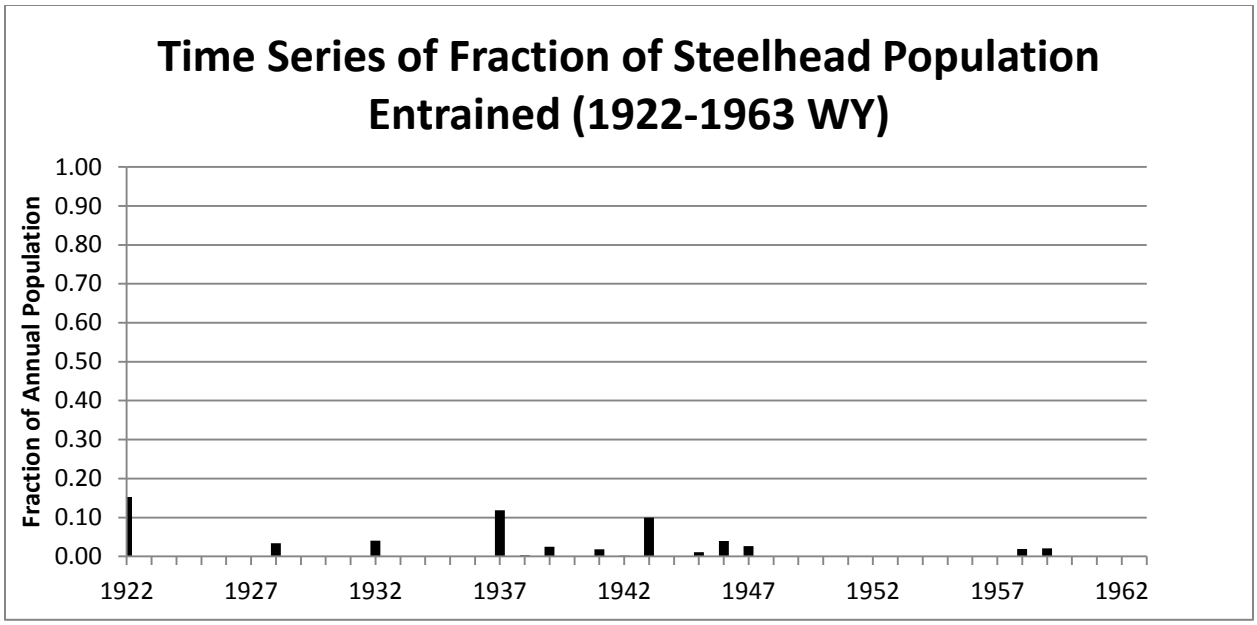


Figure 4-12. Time Series of Fraction of Spring–run Chinook Salmon Population Entrained (set 1: 1922–1963, set 2: 1964–2003)



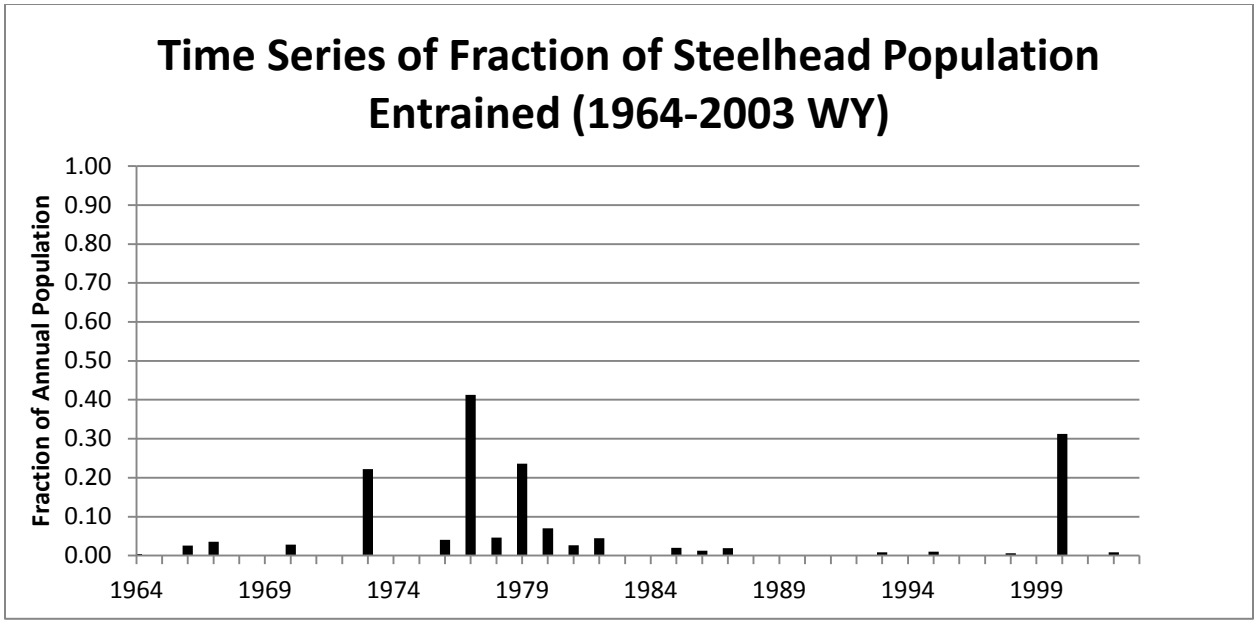
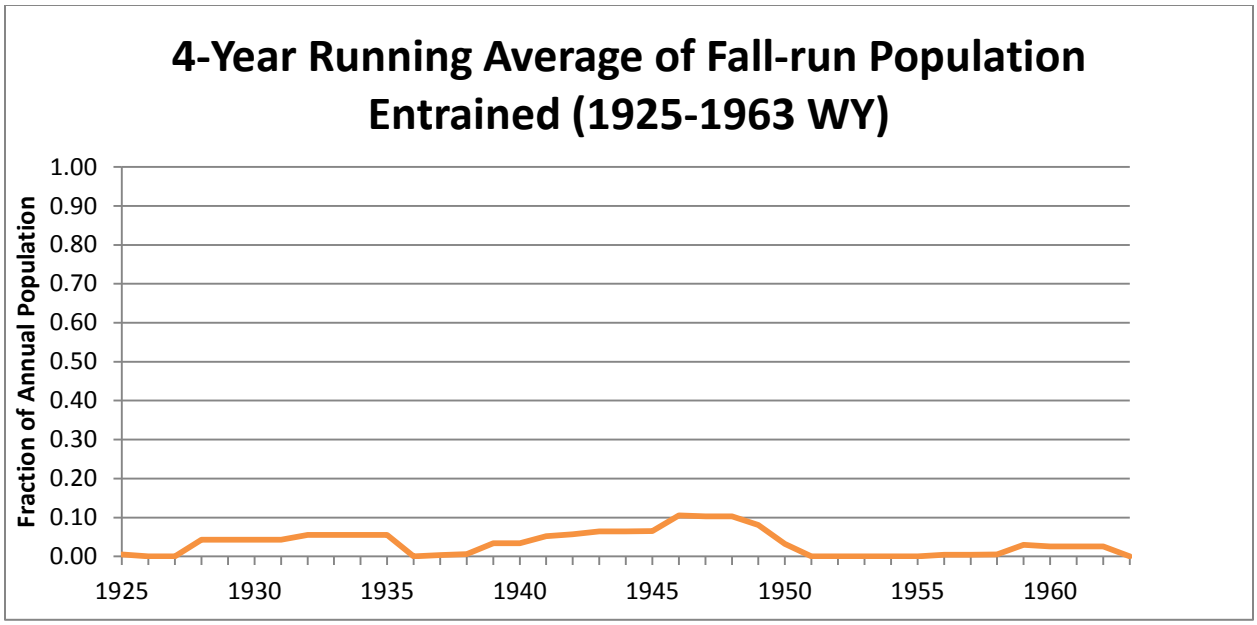


Figure 4-13. Time Series of Fraction of Steelhead Population Entrained (set 1: 1922–1963, set 2: 1964–2003)

Another way to depict the estimates of entrainment and its influence upon population dynamics is to plot a four-year running average. This approximately tracks the influence on the salmon population (the typical lifespan of a Chinook salmon is 3–7 years, and if high entrainment occurs for 4 years in a row, a significant population decrease would result). Figure 4–14, 4–15 and 4-16 depict this running average. For fall–run Chinook salmon entrainment exceeds the 10% for a 3–year period. For spring–run Chinook salmon, entrainment exceeds 10% for five years in a row. For steelhead, the model predicts entrainment exceeding 10% for 4 years in a row.



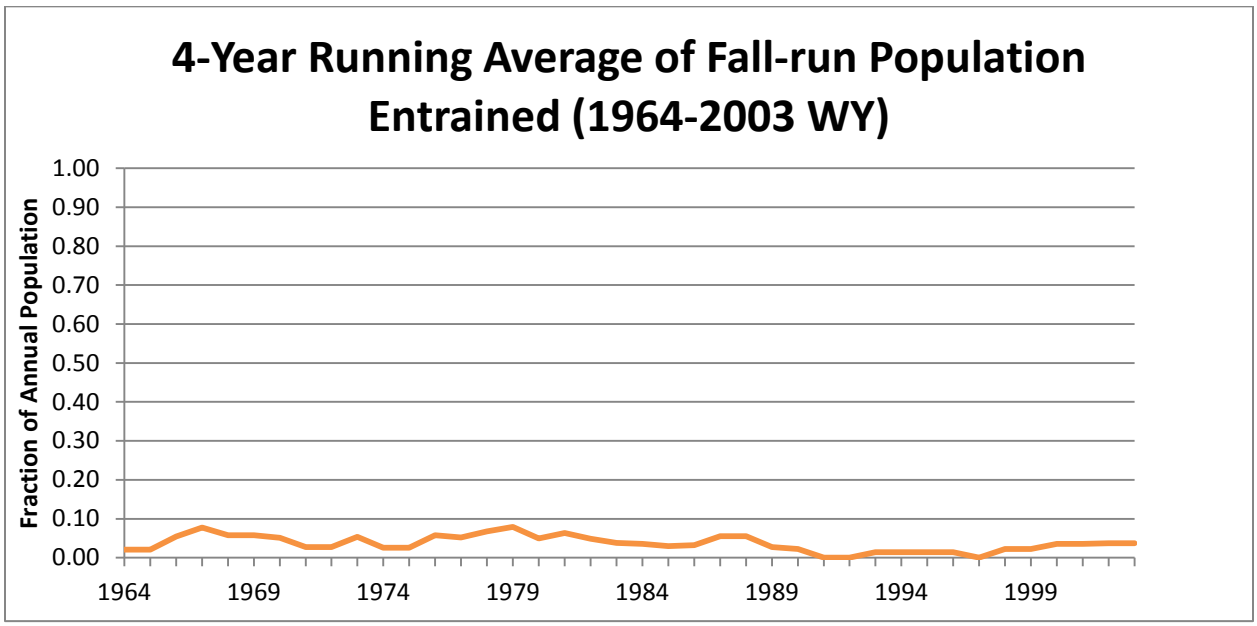
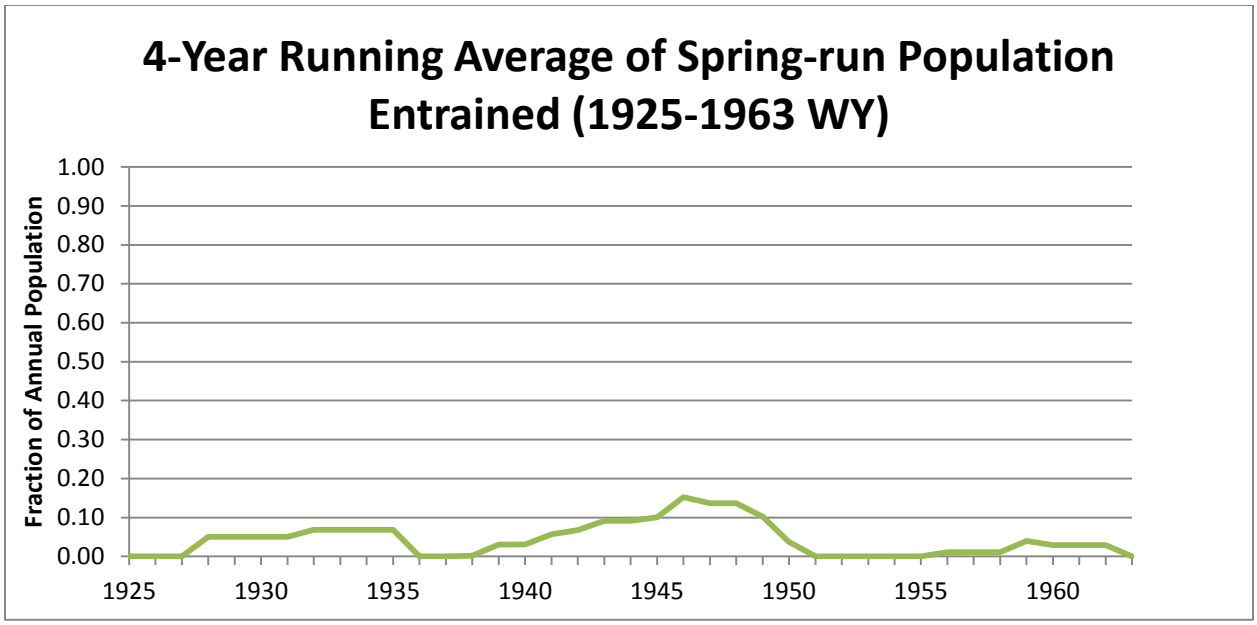


Figure 4-14. Four-Year Running Average of Fraction of Fall–run Chinook Salmon Population Entrained (set 1: 1922–1963, set 2: 1964–2003)



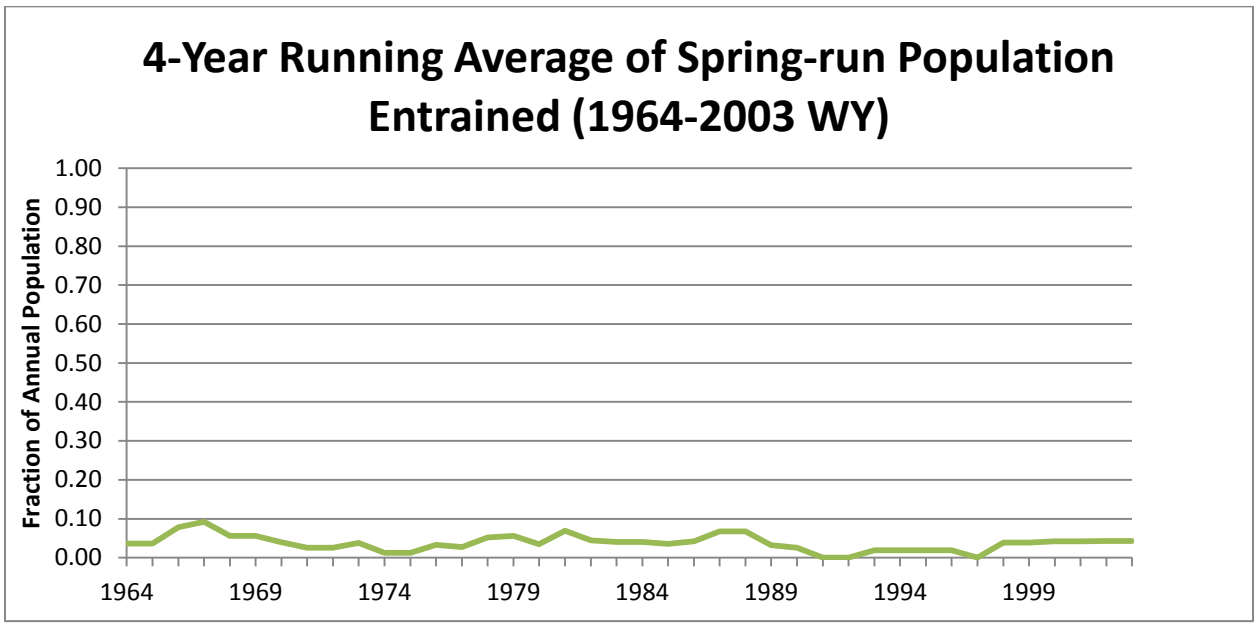
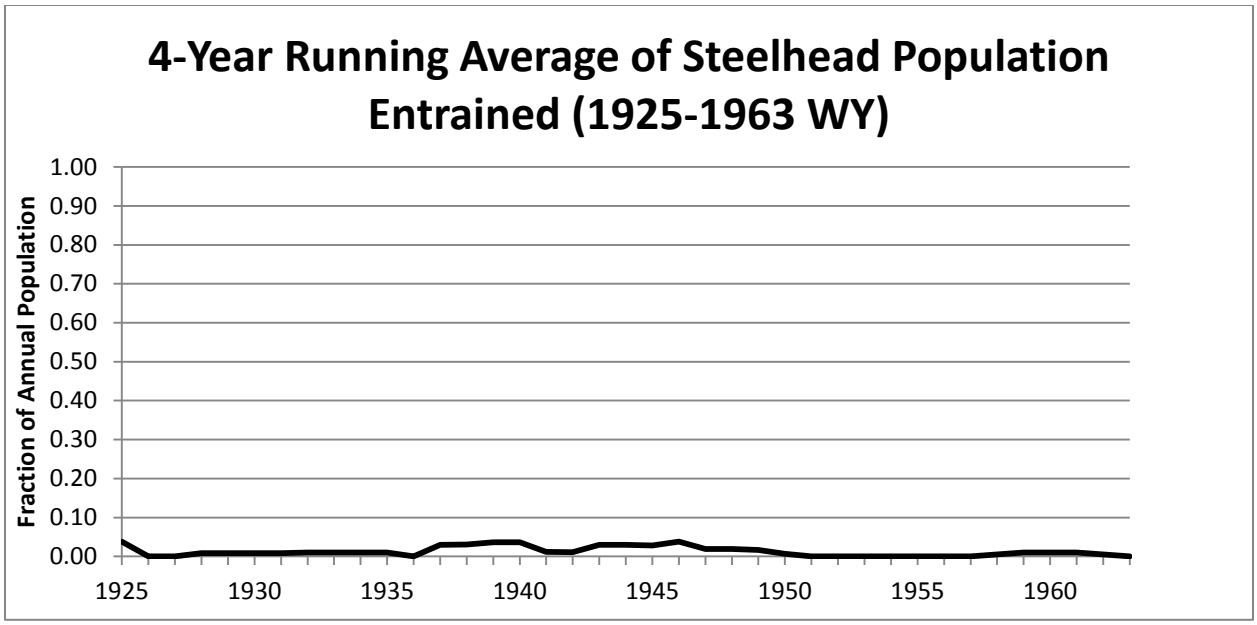


Figure 4-15. Four-Year Running Average of Fraction of Spring–run Chinook Salmon Population Entrained (set 1: 1922–1963, set 2: 1964–2003)



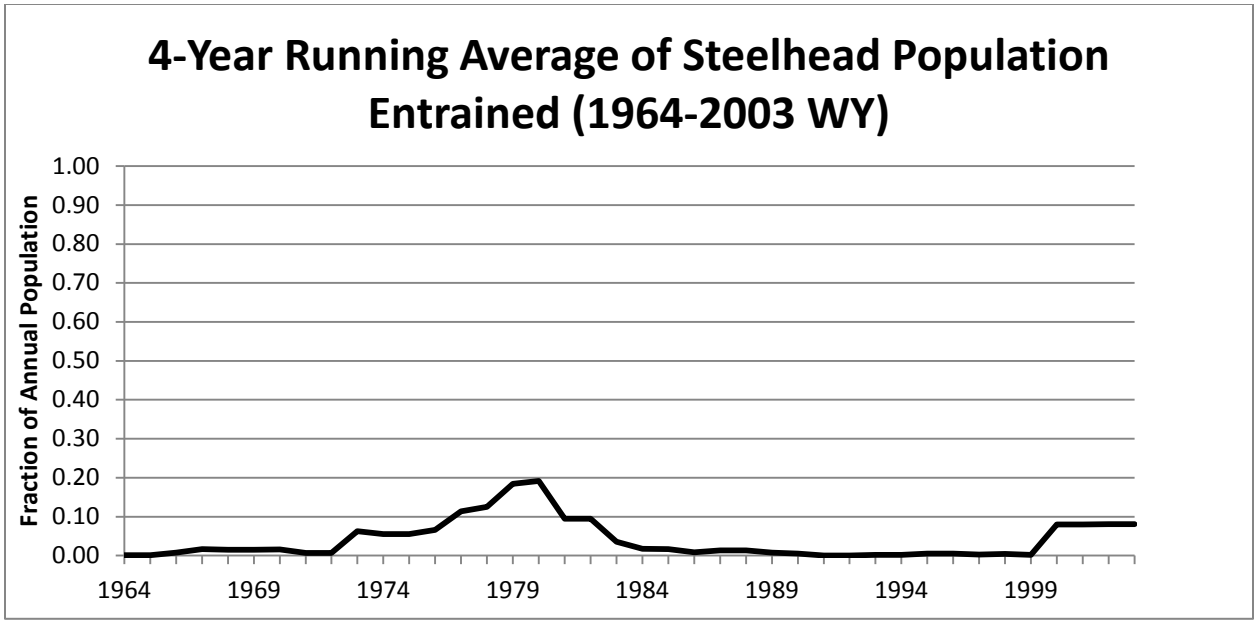


Figure 4-16. Four-Year Running Average of Fraction of Steelhead Population Entrained (set 1: 1922–1963, set 2: 1964–2003)

5.0 Discussion

The Daily Flow Model results, combined with the associated adjustments to the output, provide a solid foundation to assess juvenile salmon entrainment at Mendota Pool. The results are fairly insensitive to the precise volume of flows. However, the modeled flow is somewhat sensitive to

the Friant Dam operations and Millerton Lake runoff forecast accuracy. In the absence of perfect foresight, the model generates several precautionary flood releases. The model is also sensitive to the fish emigration model that predicts when fish will be moving downstream of the spawning areas. Because of the lack of spring–run salmon and steelhead in the river system, the emigration models (Figure 3–2 and Figure 3-5) have the potential to be the largest source of error.

5.1 Model Assumptions and Limitations

The SJRRP Daily Flow Model used the default hydrograph, with Method 3.1 “Gamma” to smooth the hydrograph between water year types as found in the WY 2010 Interim Flows Project Final EA Appendix C Attachment 1 and agreed upon by the Settling Parties. This hydrograph releases water from Friant in blocks, which simplifies computation. In reality, ramping up and down of flows would be more gradual, and the actual hydrograph of Restoration Flows as recommended by the Restoration Administrator could be advanced or retarded by up to four weeks and possess other differing characteristics.

The model does not assume perfect foresight in estimating available water, instead it uses the forecast uncertainty exactly as it was revealed over the 82–year runoff history. Runoff forecast updates in the model are made five times annually, on February 10 of each year and then monthly through June. Integrating this forecast uncertainty is important in developing a realistic model, as several operating parameters, including the volume and timing of Restoration Flows, are linked to the runoff forecast.

Further detail on modeling methods can be found in the Reclamation Technical Report No.86–68210–2012–04 – San Joaquin River Restoration Daily Flow Model.

5.2 Frequency of Floods

Precautionary flood releases, which typically occur in February and March, are more numerous in the modeled record than actual spillway releases. The SJRRP Daily Flow Model uses the same operational logic as the Friant Dam operations use, and includes the absence of perfect foresight. Thus, many precautionary flood releases were technically unnecessary when the final runoff and releases were tallied. However, because of the necessarily conservative aspect of flood protection, such precautionary flood releases likely cannot be optimized out of future operations. However, the relative lack of precautionary flood control releases in the historical record may indicate that operators can do a better job than models, and thus the analysis may over-estimate precautionary flood control releases. They remain the most frequent source of potential entrainment during the fish emigration period.

5.2.1 Flow Coordination and Accurate Forecasting

The removal of a portion of flood flows in the model output that meet the criteria was important in developing a realistic assessment. As depicted in Table 3–1, flood releases that met the set of criteria were omitted as they were unlikely to occur in real operations. The primary justification for these omissions is due to the coordination that is in place between the SJRRP, Friant Dam operators, and the Restoration Administrator which can remove the need for flood releases

because of Restoration Flows. All omitted flood releases, most of which were between 1 and 20 TAF, could either be accomplished within the current Restoration Flow Guidelines or were so small as to be inconsequential to the total water budget. These omissions provided more confidence in the accuracy of the model, yet had only a modest effect upon the frequency and volume of water into Mendota Pool. It is possible that these omissions were overly optimistic, which would produce a too low of an estimate of entrainment; however, if left in the hydrology record, there would still be too many instances of flood releases compared to the historic record of Friant Dam. The omissions are a reasonable and appropriate assumption to refine the model input.

The model output highlights the importance of coordination between SJRRP Restoration Flow scheduling and Friant Dam operations. Additionally, the model underscores the importance of accurate forecasting. Many flood releases in the record could be accomplished by adjustment of the default Restoration Flow hydrograph to accomplish both flood protection and restoration. The flexibility that is available to the Restoration Administrator in scheduling Restoration Flows can substantially influence the timing and magnitude precautionary flood releases. This could produce a positive benefit by reducing flood releases while simultaneously enhancing flood protection and potentially improving water supply in subsequent months. It is possible that through such coordination, entrainment could be further reduced by limiting flood flows. Discussion of adjustments to the default hydrograph are discussed in Section 5.6.

5.2.2 Influence of Climate Change

The following climate change projections are developed from four climate change scenarios (generated by Reclamation for the Central Valley Project Integrated Resource Plan) that are representative of 100+ discrete climate models simulations, and a fifth “consensus scenario” that is an ensemble of the central tendency of temperature and precipitation. The following climate predictions are for mid-century, with a date of 2055. Key conclusions for the San Joaquin River basin include:

- Consensus scenario predicts air temperatures in the basin to rise by 3.6° F (2.0° C), with the suite of four scenarios predicting a range from 1.8° to 4.7° F (1.0° to 2.6° C) (Reclamation, September 2014a)
- Consensus scenario predicts runoff in the basin to decline by 6%, with a suite of four scenarios predicting a range from +25% to -31%. (Reclamation, September 2014a)
- Consensus scenario predicts that reduction in runoff will be primarily from reduced number of “Normal-wet” years in favor of “Normal-dry” years. The proportion of “Dry”, “Critical-high” and “Critical-low” water year types are predicted to remain relatively stable under this scenario. (SJRRP, September 2012)
- All scenarios predict the timing of peak runoff to advance, occurring slightly earlier in the year. (Reclamation, September 2014; Reclamation, September 2014a)

The SJRRP Daily Flow Model used the historic record from 1922 to 2003. This was not adjusted for anticipated changes due to climate change. As described above, the consensus scenario predicts runoff to decline by 6%, and Normal-Wet years to be reduced in favor of Normal-Dry

years. The 50-year average runoff is 1,831 thousand acre-feet, so a 6% reduction would reduce the average to 1,721 thousand acre-feet of average annual runoff.

As a simple and rough sensitivity analysis was done to account for the possible effects of climate change on fish entrainment. A 6% reduction in runoff reduces the average runoff for the 82 year period from 1,730 thousand acre-feet to 1,626 thousand acre-feet. When this change is done exclusively by changing Normal-Wet years into Normal-Dry years, the percentage of Normal-Wet water year types is reduced to approximately 12% of the years (from 30%), and Normal-Dry is increased to approximately 48% of the years (from 30%). To calculate the effect on fish populations, water year type average results for the 3 species are used. A monthly or more detailed analysis is not appropriate for this rough calculation, as it is based exclusively on a change in average water year type and doesn't include hydrologic variability.

Table 5-1 shows these adjustments. The changes are based on the water year type averages presented in Figures 4-8, 4-9, and 4-15 above, and just adjusting the percentage of water year types that occur when calculating the water year type weighted average. Fall-run and spring-run Chinook experience slight increases in the average annual entrainment, while steelhead entrainment is reduced, as Normal-Wet year types have higher steelhead entrainment than Normal-Dry (Table 4-9) due to the greater flood flows during the steelhead emigration period.

Table 5-1. Average Annual Entrainment With and Without Climate Change

	Fall-Run Chinook Salmon	Spring-Run Chinook Salmon	Steelhead (with flood and Exchange contractor flows)
Current – without climate change	3.47%	3.96%	2.68%
With climate change	3.50%	4.06%	1.94%

5.2.3 Mass Balancing of Flows

Because the SJRRP Daily Flow Model was created and run before the first Exchange Contractor delivery from Friant Dam in 2014, and uses a 1922-2003 hydrology, the model did not incorporate Exchange Contractor releases from Friant Dam. In lieu of rerunning the model, flows for Exchange Contractors in dry years were synthesized in Excel. For practicality reasons, additional flows were not compensated for by a commensurate draw–down of the reservoir. This added more water into Millerton Lake in the modeled scenario than would actually be available. The largest of these flows was 270 TAF assigned to the summer of 1977 (a Critical–Low water year type). The following water year, high runoff resulted in flood flows from February through June of 1978. A portion of these flood flows would not have occurred if the Exchange Contractor flows had been mass–balanced in the model. Due to the complexity of the model output and the large volume of water involved, no attempt was made to edit out these subsequent flood flows. This is a known bias in this analysis that should very slightly overestimate flood flows and thus slightly overestimate associated entrainment.

Additionally, small flood flows that are primarily an artifact of the SJRRP Daily Flow Model logic and not likely to occur in a realistic scenario were omitted. These were also not mass–balanced. However, in each case they were small volumes not exceeding 20 TAF and they were not omitted if it would have subsequently increased flood flows. Any bias to underestimate flood flows caused by these omissions would be small or negligible. This small bias would slightly underestimate associated entrainment.

5.3 Exchange Contractor Delivery Timing

Despite only two occurrences of deliveries to the SJREC under the Exchange Contract from Friant Dam in the actual 82–year history, it seemed appropriate to include more given the increased pressure upon water resources in California. Assigning five SJREC deliveries, one large one to the Critical–Low year and four smaller ones to the Critical–High years, was deemed a reasonable and perhaps conservative assumption. The results show that Exchange Contractor releases from Friant Dam are unlikely to have more than a minor overall impact upon juvenile salmon. This is due to the timing of each release, which based on the two recent instances in 2014 and 2015, would start on or later than May 15. In this analysis, Critical-High water years were assumed to have a July and August delivery, which is outside of the emigration period, and Critical-Low water year types were assumed to have an Exchange Contractor delivery from mid-May to the end of September. Given that Friant Dam releases to satisfy the Exchange Contractors' water rights are measures taken after other options have been exhausted, this mid–May or mid-July start was deemed a reasonable assumption. The timing of the start of Exchange Contractor releases is more important to fish entrainment than the duration, flow, or volume of releases. If such flows were advanced earlier in the season, they would overlap the time when a greater number of juveniles were emigrating and entrainment would rise sharply.

Other assumptions could be made regarding delivery timing, such as assigning deliveries based on Shasta critical year types instead of San Joaquin River year types, or assuming the Exchange Contractors are delivered water from March through August. This analysis uses assumptions based on 2 years of data on deliveries to the SJREC – 2014 and 2015 – and is highly uncertain.

When fish are in the San Joaquin River, close coordination between Reclamation and water contractors/operators during future Exchange Contractor releases will be important to keep impacts to salmon to a minimum. If future Exchange Contractor releases are more common than synthetically generated in this analysis, or involve more volume than anticipated, then negotiating the timing of water release or making other provisions to move fish out of the critical reaches before such flows should be considered.

5.4 Mendota Pool Entrainment Mortality

This analysis estimates entrainment at Mendota Pool. It is expected that fish mortality would be extremely high once entrainment occurred. A conservative assumption is that all entrained fish would be lost; however actually mortality may be slightly less than 100%. During flood flows, some fish may pass through Mendota Pool and over or through Mendota Dam and successfully complete their life history. Major flows would be directed at Mendota Dam from the San Joaquin

River and/or Kings River flood flows, and thus flow velocity and direction in Mendota Pool should direct juveniles towards and over the dam, instead of into canals. For the purposes of this analysis, 100% loss is assumed.

This analysis addressed the question of the overall entrainment into Mendota Pool, not the individual water intakes at the pool. Screening of individual intakes and other fish passage measures to reduce fish mortality are not evaluated here. The Mendota Pool Bypass and Reach 2B project required in the Stipulation of Settlement requires a Mendota Pool Bypass to keep fish out of Mendota Pool and avoid screening individual intakes.

Effects of structures may also cause impact to fish, including increased predation at structures and ladders, etc. These additional fisheries impacts were not considered as they would occur both with and without a Mendota Pool Fish Screen.

5.5 Fish Emigration Model Error

Spring–run Chinook salmon emigration was based on catch data from the Feather River of the Sacramento Valley, a higher latitude and lower elevation watershed than the San Joaquin River. To attempt to quantify the error that may be due to an inaccurate fish emigration model, four operations were conducted. One, the fish emigration curves for fall–run, spring–run, and steelhead were advanced 1 month. Two, the curves were delayed 1 month; three a Gaussian curve with 98% spanning 5 months centered on March 15, and fourth a “flatter” Gaussian curve with 98% spanning 7 months centered on March 31. These were iteratively substituted to examine the influence and potential error of the characteristic peaks and valleys of the analyzed fish emigration curve (Table 5–2 and Table 5–3). These three tests should likely define the bounds of error in the model (Table 5–3).

Table 5-2. Average Entrainment Percentages for Salmon Emigration Curves (fall–run, spring–run, and steelhead) — Average and Percentiles

	Original Emigration Pattern	Advanced 1 Month	Delayed 1 Month	5 month Gaussian centered on March 15	7 month Gaussian centered on March 31
Average	3.47% / 3.96% / 2.68%	6.05% / 3.44% / 2.95%	2.5% / 4.49% / 5.87%	4.94% / 4.94% / 4.94%	3.94% / 3.94% / 3.94%
February 50th Percentile	0% / 0% / 0%	0% / 0% / 0%	0% / 0% / 0%	0% / 0% / 0%	0% / 0% / 0%
February 80th Percentile	4% / 7% / 0%	10% / 6% / 3%	1% / 7% / 0%	7% / 7% / 7%	4% / 4% / 4%
February 90th Percentile	7% / 12% / 0%	18% / 12% / 6%	1% / 13% / 0%	13% / 13% / 13%	8% / 8% / 8%
February 95th Percentile	8% / 15% / 0%	21% / 14% / 7%	1% / 15% / 0%	16% / 16% / 16%	9% / 9% / 9%
March 50th Percentile	0% / 0% / 0%	0% / 0% / 0%	0% / 0% / 0%	0% / 0% / 0%	0% / 0% / 0%
March 80th Percentile	2% / 1% / 1%	2% / 1% / 2%	1% / 1% / 0%	2% / 2% / 2%	2% / 2% / 2%
March 90th Percentile	7% / 5% / 2%	9% / 3% / 6%	3% / 5% / 0%	8% / 8% / 8%	6% / 6% / 6%
March 95th Percentile	8% / 5% / 3%	10% / 4% / 7%	3% / 6% / 0%	10% / 10% / 10%	7% / 7% / 7%

Table 5-3. Average Entrainment Percentages for different Fish Emigration Curves (fall–run and spring–run and steelhead) — By Water Year Type

	Original Analysis	Emigration Advanced 1 Month	Emigration Delayed 1 Month	5 month Gaussian centered on March	7 month Gaussian centered on March
Wet Average	2.8% / 3.6% / 1.7%	5.3% / 3.2% / 2.2%	2.3% / 3.9% / 10.7%	4.2% / 4.2% / 4.2%	3.7% / 3.7% / 3.7%
Normal–Wet Average	3.8% / 4.2% / 5.1%	6.2% / 3.7% / 3.2%	3.5% / 5.1% / 7.7%	5.1% / 5.1% / 5.1%	4.5% / 4.5% / 4.5%
Normal–Dry Average	4.0% / 4.8% / 0.8%	7.5% / 4.2% / 3.3%	1.1% / 5.0% / 0.0%	6.0%/6.0% / 6.0%	3.9% / 3.9% / 3.9%
Dry Average	2.4% / 3.0% / 0.4%	4.7% / 2.7% / 1.9%	0.6% / 3.2% / 0.0%	3.7% / 3.7% / 3.7%	2.3% / 2.3% / 2.3%
Critical–High Average	3.2% / 2.1% / 1.0%	3.9% / 1.4% / 2.6%	3.2% / 2.2% / 15.9%	3.7% / 3.7% / 3.7%	4.1% / 4.1% / 4.1%
Critical–Low Average	8.0% / 2.6% / 41.3%	1.9% / 0.0% / 15.3%	34.8% / 12.0% / 59.5%	4.7% / 4.7% / 4.7%	14.7% / 14.7% / 14.7%

These four scenarios provide an understanding of the sensitivity of this analysis to the prescribed emigration curve. Based on the original emigration curve, 3.47% of Fall–run Chinook salmon are predicted to be entrained overall, entrainment estimates range from 2.5% of juvenile fall-run predicted to be entrained to 6.05% of juvenile fall-run predicted to be entrained depending on the timing of the peak and the shape of the emigration curve.

For spring–run Chinook salmon 3.96% overall entrainment is predicted based on the original emigration curve, with entrainment percentages ranging from 3.44% to 3.94% depending on the emigration curve used. Because of the broader emigration curve of spring–run Chinook salmon, the entrainment analysis is less sensitive to the exact shape and timing of the emigration curve as compared to fall–run.

For steelhead, 2.68% overall entrainment is predicted based on the original emigration curve, with entrainment percentages ranging from 2.68% to 5.87% depending on the emigration curve used. As the steelhead migration extends later into spring, delaying it by another month has significant impacts on entrainment due to releases for the Exchange Contractors in the summer.

5.6 Other Salmon Considerations

This analysis makes no assessment as to the effect of the predicted entrainment at Mendota Pool upon salmon population dynamics or whether restoration fishery targets would be jeopardized. Entrainment is likely to be episodic, taking a higher toll upon fish in some years while the majority of years have little or no mortality from entrainment. This is a fundamentally different impact than a gradual loss of the population each and every year. Additionally, wetter years are likely to have a higher number of individual juvenile fish than drier years due to good river conditions creating high survival rates from emergence, and impacts during those wetter years would generally affect larger numbers of individuals than in drier years. It should be noted that the majority of entrainment occurs during the months of February and March across four water year types — Wet, Normal–Wet, Normal–Dry, and Dry; these represent 94% of the water years. Steelhead is a bit different, with impacts primarily in March, May and June. Entrainment impacts are not focused on one particular water year type, with the exception of steelhead in the critical year-types.

Mortality of individuals at the fry stage (a growth phase associated with December–March) can be considered to have a different magnitude of impact than individuals at a later growth stage (i.e. parr or smolt). A cohort of juvenile salmon is expected to winnow as the fish mature, at later life stages there are less individuals yet each individual represents a larger fraction of the total cohort. This analysis made no attempt to give differing weight to entrainment mortality by life history stage.

An assessment of the impact of predicted entrainment upon salmon population dynamics is recommended. This has the potential to reveal disparate weighting of mortality from one water year type to another, the importance of a particular cohort to the greater population health, and the impact of successive years of entrainment. Such an analysis could focus on the individual entrainment events.

Finally, and perhaps most importantly, the necessary simplification made in this analysis that proportion of flow volume represents proportion of fish entrained is certainly an important caveat in interpreting the results. Given the intended brevity of this analysis and the paucity of data on fish emigration, it was impractical to model variations in fish emigration simultaneously over time, space, and flow. Juvenile salmon are known to respond to falling hydrographs by emigrating downstream, thus one would expect a higher concentration of fish approaching Mendota Pool during such times. Alternatively, the rising hydrograph could also flush juvenile fish downstream to a greater degree than a steady flow. In reality we should expect emigration timing to be correlated with or triggered by flow changes, and this should be kept in mind when interpreting the results.

5.7 Adjustment of Restoration Hydrograph

The hydrograph used in this analysis was the default hydrograph that is constructed of "blocks" of flow. This analysis assumed that blocks could be moved forward and backward in the season (with the bounds dictated by the Settlement) to reduce the need for flood flows. However, other important characteristics of the flow, including the rate of rise and fall in the hydrograph and the temperature of the water, can alter the emigration behavior of fish. This analysis does not try to predict Restoration Administrator recommendations, which will likely be smoother and more varied than the block Settlement hydrographs.

Though this creates an uncertainty in the present analysis, it also provides an opportunity for the Restoration Administrator to prompt fish emigration by recreating natural cues. For example, if it is anticipated that juveniles will respond to a falling hydrograph at a certain time of year, Restoration Flows could be scheduled to immediately follow a flood pulse, thereby permitting passage down a safe route, such as the Mendota Pool Bypass.

5.8 Mendota Pool Bypass Operations

The SJRRP does not control flood operations. It is the Lower San Joaquin Levee District's discretion how to route flood flows. However, juvenile fish mortality could be reduced if a portion of flows is routed though the Mendota Pool Bypass during flood flows. Similarly, juvenile fish mortality could be reduced if a portion of flows is routed though the Mendota Pool Bypass during Exchange Contractor deliveries. This proportion may be satisfied with the normal distribution of Exchange Contractors demand, of which about 80% is at Mendota Pool and 20% is at Arroyo Canal. Reclamation may coordinate with SJREC and the operator of Mendota Pool to discuss the potential for splitting delivery flows between Mendota Pool and the Mendota Pool Bypass.

5.9 Efficacy of a Mendota Pool Fish Screen

Design criteria for fish screens establish that screens should effectively handle the 95th percentile flows (i.e. all but the largest flows). Applying this criteria to Mendota Pool, flows greater than 2,368 cfs would overtop the fish screen or render it ineffective. However, because of operational

logic at the Chowchilla and Mendota Pool bypasses, the maximum expected flow is only 2,500 cfs, barely larger than 2,368 cfs. Only during extreme flood events would flow into Mendota Pool exceed this amount. Assuming a 2,500 cfs design flow is chosen for a screen, there would be negligible entrainment due to overtopping or overwhelming of the screen.

Fish screens can be very effective in ideal circumstances. “Evaluation of several operational fish screens on the Yakima River using releases of marked Chinook salmon fry (50–60 mm fork length) showed 94–99% effectiveness (Neitzel et al., 1998)” (NMFS 1995). However, smaller fry can be entrained when larger than recommended 3.2 mm mesh openings are used, with entrainment losses documented at 17% in one location in Washington (Neitzel et al., 1990), and 6% in another (Mueller et al, 1995).

Because the majority of predicted entrainment in this model occurs in February and March, the critical challenge will be for the screen to be effective upon the very small fry (35–60 mm) expected during those months. This complicates design, as a tighter mesh increases the force of the river upon the structure, and is more likely to increase the maintenance needs. For steelhead, higher entrainment is during March, May and June. The fish screen would not have this issue during the May and June periods as the fish would be larger.

Other factors that may reduce effectiveness include blocking by debris of the screen or the outlet, and predation by piscivorous fish taking advantage of the velocity reduction at the structure for feeding. As discussed, an adequate outlet of water to route screened fish through the Mendota Pool Bypass is integral to the design and installation. Proper design and vigilant maintenance are essential to maximizing screen efficacy.

Fish screens can be an effective way to exclude juvenile fish from canals and other conveyance structures, however their effectiveness is less than 100%, especially in challenging locations and circumstances as is the case at Mendota Pool. The fraction of juvenile salmon population that can be saved by installation of a fish screen is not the full 6.0% (fall–run) or 6.9% (spring–run) of expected entrainment, but some lesser value based on screen efficiency.

Additionally, a screen at Mendota Pool will require an adequate outlet and suitable fraction of water to be diverted into the bypass. There is some uncertainty as to whether the normal split of SJREC demand at Mendota Pool and Arroyo Canal would be sufficient for fish screen escape or whether a greater minimum amount or fraction of flow would have to be maintained at the Bypass during flood flows and Exchange Contractor releases.

5.10 Other Fish Species

Although not analyzed here, other fish species may be at risk for entrainment at Mendota Pool. These species may benefit from a fish screen or other measures to reduce entrainment. Entrainment risks for other fish during flood flows are already present to varying degrees, and may not be caused by SJRRP Restoration Flows.

6.0 Conclusions

This analysis shows that modeled future flows combined with a hypothetical fish emigration pattern can estimate the fraction of a juvenile salmon cohort likely to be entrained in Mendota Pool. This was found to be 3.47%, 3.96%, and 2.68% of annual population for fall–run, spring–run, and steelhead respectively over the 82–year modeling run. The greatest entrainment came from precautionary flood releases in February and March, and for steelhead during flood and Exchange contractor deliveries in May and June. There is considerable variation in entrainment from year to year, with significant entrainment occurring in one out of four years. By water year type, fall–run entrainment ranges from an average of approximately 2.4% in Dry years, upwards to approximately 8% in the one Critical Low year type. For spring–run, values range from 2.1% in Critical–Low and Critical–High years to 4.8% in Normal–Dry water year types. For steelhead, entrainment ranges from an average of 0.4% in Dry water year types to 41.3% in the one Critical-Low water year type in the analysis (when fish could not successfully complete their life history anyway due to a lack of Restoration Flows and a dry river channel). The influence of Exchange Contractor releases upon salmon entrainment at Mendota Pool are predicted to account for 5 percent of the total predicted entrainment for fall–run (where 100 percent of the total predicted entrainment would mean the Exchange Contractor releases account for all of the entrainment), 3 percent of the total entrainent for spring–run, and 16 percent of the total entrainment for steelhead. Delaying Exchange Contractor releases till after emigration is complete could diminish these minor contributions to essentially zero.

Entrainment is episodic, being tied to occasional flood flows. Four out of five years have negligible entrainment, with the other one out of five years (80th percentile) typically having 6%, 8%, and 1% entrainment for fall–run, spring–run salmon, and steelhead, respectively. In one out of ten years (90th percentile), entrainment rises to 15% and 17% for fall–run and spring–runs, and to 9% for steelhead. In at least 3 out of 82 years predicted entrainment exceeds 15% for all 3 species. These high entrainment levels are significant if they occur in consecutive years. Occasionally significant entrainment can occur during successive years. A four-year running average of entrainment, corresponding to the 3-7 year lifespan of a salmon cohort, exceeds 10% for 3 years out of the 82–year run for fall-run, 5 years out of the 82-year scenario for spring-run Chinook, and for 4 years out of the 82-year run for steelhead.

Error resulting from uncertainty in the fish emigration models was estimated by shifting the emigration curves ahead and behind in the season, as well as comparing against two generic bell–shaped curves. This test indicated that the fall–run predictions of entrainment were more sensitive to shifts in timing and shape of the curve, while the spring–run predictions were more robust. However, because the fall–run data is informed by actual recent capture data on the San Joaquin River, there is more confidence in that particular emigration curve. The spring–run curve, though more resistant to errors in entrainment, is based on more speculative fish emigration behavior. Average fall-run predicted entrainment may range from 2.5% to 6.05%, average spring-run entrainment is predicted to range from 3.44% to 3.94%, and steelhead entrainment may range from 2.68% to 5.87% depending on the emigration curve used. Using the predicted result of 3.47% and 3.96% of fall–run and spring–run juvenile salmon entrainment,

and 2.68% of steelhead, a properly designed fish screen is estimated to avert approximately 90% entrainment. Any fish screen installation can be made more effective by combining the facility with management actions such as altering flows to cue fish emigration.

6.1 Alternatives to Fish Screen Installation

There are a number of operational and management actions that can be taken to reduce entrainment at Mendota Pool in the absence of a fish screen. Some of these, such as adjusting the timing of Restoration Flows and shaping the hydrograph, are viable management options that are within the scope of the SJRRP. Others, such as maintaining a portion of flood flows to minimize entrainment, are speculative and would need agreement from other parties. The impact of Exchange Contractor releases is minor in the current analysis, and could be further mitigated by delaying such flows if juvenile fish are in the river, until water temperatures exceed a certain threshold, or emigration has ceased.

Some of these alternatives require adjustments to water delivery operations; and all of them require close coordination between Friant Dam operations, Implementing Agencies, the Restoration Administrator, and water users.

7.0 References

McBain and Trush, December 2002. San Joaquin River Restoration Study Background Report.

Mueller, R. P., Abernethy, C. S. and Neitzel, D. A. (1995). A Fisheries Evaluation of the Dryden Fish Screen Facility: Annual Report 1994. Prepared for US Dept. of Energy, The Bonneville Power Administration. Portland, Oregon, USA.

Mussetter Engineering, Inc., September 2000. Hydraulic and Sediment Continuity Modeling of the San Joaquin River from Mendota Dam to the Merced River, California. Prepared for the U.S. Bureau of Reclamation, Fresno, California, Contract No. 99–CS–20–2080, MEI Project No. 99–12.

Mussetter Engineering, Inc., August 2002. Hydraulic and Sediment Continuity Modeling of the San Joaquin River from Friant Dam to Mendota Dam, California. Prepared for the U.S. Bureau of Reclamation, Fresno, California, Contract No. 98–CP–20–20060, MEI Project No. 98–13.

National Marine Fisheries Service, 1995. Screen Criteria. Environmental & Technical Services Division, Portland, Oregon. ftp://ftp.odot.state.or.us/techserv/Geo–Environmental/Environmental/Procedural%20Manuals/Biology/Screening%20Criteria/Fish%20Screening%20Criteria%20NMFS.pdf

Neitzel, D. A., Abernethy, C. S. and Martenson, G. A. (1990). A Fisheries Evaluation of the Westside Ditch and Town Canal Fish Screening Facilities, Spring 1990. Prepared for US Dept. of Energy, The Bonneville Power Administration. Portland, Oregon, USA

Reclamation Board, 1969. Operation and Maintenance Manual for San Joaquin River and Chowchilla Canal Bypass Automatic Control Structures and Appurtenances, Part III. Lower San Joaquin River Flood Control Project.

Reclamation, September 2014. Sacramento and San Joaquin Basins: Climate Impact Assessment. US Bureau of Reclamation Report.

Reclamation, September 2014a. Central Valley Project Integrated Resource Plan. U.S. Bureau of Reclamation. September, 2014.

Reclamation, November 2014. Climate Change Adaptation Strategy. U.S. Bureau of Reclamation.

San Joaquin River Resource Management Coalition, August 2003. Upper San Joaquin River Conceptual Restoration Phase 1 Planning Document. Produced by CH2M Hill.

San Joaquin River Resource Management Coalition, September 2007. San Joaquin River Settlement Agreement and Legislation. Produced by CH2M Hill.

San Joaquin Fisheries Management Work Group, June 2009. Fisheries Management Plan: A Framework for Adaptive Management in the San Joaquin River Restoration Program. San Joaquin River Restoration Program, 106 pages.

San Joaquin River Restoration Program, December 2009. Mendota Pool Fish Screen Assessment. U.S. Bureau of Reclamation, 45 pages.

San Joaquin River Restoration Program, April 2011. Program Environmental Impact Statement/Report. SCH #2007081125.

San Joaquin River Restoration Program, September 2012. Sensitivity of Future Central Valley Project and State Water Project Operations to Potential Climate Change and Associated Sea Level Rise." Appendix I of Program Environmental Impact Statement/Review.

San Joaquin River Restoration Program, November 2012. Minimum Floodplain Habitat Area for Spring and Fall-run Chinook Salmon. Reclamation Report. http://www.restoresjr.net/download/program-documents/program-docs-2012/20121127_MinimumRearingHabitat.pdf

Walters, A, Holzer D., Faulkner J., Warren C., Murphy P., and McClure M. 2012. Quntifying Cumulative Entrainment Effects for Chinook Salmon in a Heavily Irrigated Watershed. In Transactions of the American Fisheries Society 141: 1180–1190.

Vandegrift, T. September 2012. San Joaquin River Restoration Daily Flow Model (SJRRW) Documentation for the Reach 4B Study. US Bureau of Reclamation Technical Report No.86–68210–2012–04.

8.0 Appendix A

Table of Water Year Types

Water Year Type	Associated Unimpaired Runoff into Millerton Lake (TAF)	Approximate Percentile	Restoration Flow Allocation at Gravelly Ford (TAF)	Actual Water Years in 1922 – 2003 Record
Wet	> 2,500	80–100	560.3	1938, 1941, 1952, 1956, 1958, 1967, 1969, 1978, 1980, 1982, 1983, 1986, 1993, 1995, 1997, 1998
Normal–Wet	1,450 – 2,500	50–80	287.1 – 434.2	1922, 1923, 1927, 1932, 1935, 1936, 1937, 1940, 1942, 1943, 1945, 1946, 1951, 1962, 1963, 1965, 1973, 1974, 1975, 1979, 1984, 1996, 1999, 2000
Normal–Dry	930 – 1,449	20–50	217.1 – 287.0	1925, 1926, 1928, 1933, 1944, 1947, 1948, 1949, 1950, 1953, 1954, 1955, 1957, 1959, 1966, 1970, 1971, 1972, 1981, 1985, 1989, 1991, 2001, 2002, 2003
Dry	670 – 929	5–20	159.1 – 217.0	1929, 1930, 1934, 1939, 1960, 1964, 1968, 1987, 1988, 1990, 1992, 1994
Critical–High	400 – 669	1–5	74.6	1924, 1931, 1961, 1976
Critical–Low	< 400	<1	3.6	1977

Mendota Pool Bypass and Reach 2B Improvements Project

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List of Abbreviations and Acronyms

ACHP	Advisory Council on Historic Preservation
Act	San Joaquin River Restoration Settlement Act
BMP	best management practice
BO	biological opinion
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
cfs	cubic feet per second
CNDDB	California Natural Diversity Database
Corps	U.S. Army Corps of Engineers
CSLC	California State Lands Commission
CVP	Central Valley Project
CWA	Federal Clean Water Act
Delta	Sacramento-San Joaquin Delta
DFW	California Department of Fish and Wildlife
DWR	California Department of Water Resources
EFH	Essential Fish Habitat
EIS/R	Environmental Impact Statement/Environmental Impact Report
EPA	U.S. Environmental Protection Agency
Exchange Contractors	San Joaquin River Exchange Contractors
Guidelines	Federal Clean Water Act Section 404(b)(1) Guidelines
LEDPA	least environmentally damaging practicable alternative
LTS	less than significant
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NRDC	Natural Resources Defense Council
OHWM	ordinary high water mark
O&M	operation and maintenance
PEIS/R	Program Environmental Impact Statement/ Environmental Impact Report
PS	potentially significant
PSU	potentially significant and unavoidable
Project	Mendota Pool Bypass and Reach 2B Improvements Project

Reclamation	U.S. Department of the Interior, Bureau of Reclamation
ROD	Record of Decision
RWQCB	Regional Water Quality Control Board
S	significant
Secretary	Secretary of the Interior
Settlement	Stipulation of Settlement in NRDC, et al., v. Kirk Rodgers, et al.
Settling Parties	Natural Resources Defense Council, Friant Water Authority, and the U.S. Departments of the Interior and Commerce
SHPO	State Historic Preservation Officer
SJRRP	San Joaquin River Restoration Program
SJVAPCD	San Joaquin Valley Air Pollution Control District
State	State of California
SU	significant and unavoidable
SWP	State Water Project
SWRCB	State Water Resources Control Board
USFWS	U.S. Fish and Wildlife Service

1.0 Introduction

The U.S. Department of the Interior, Bureau of Reclamation (Reclamation) proposes to implement the Mendota Pool Bypass and Reach 2B Improvements Project (Project), a Phase 1 project of the overall San Joaquin River Restoration Program (SJRRP). Project implementation would involve the discharge of dredged or fill material to waters of the United States. Accordingly, Reclamation will submit a Federal Clean Water Act (CWA) Section 404 permit application for the Project to the U.S. Army Corps of Engineers (Corps), Sacramento District. It also will submit an application for a CWA Section 401 water quality certification to the Central Valley Regional Water Quality Control Board (RWQCB).

This document provides information to the Corps and to the U.S. Environmental Protection Agency (EPA), which co-administers the CWA Section 404 regulatory program, to enable a determination that implementation of the Project complies with the CWA Section 404(b)(1) guidelines (Guidelines). More specifically, it includes information to support a recommendation that the preferred alternative for the Project is the Least Environmentally Damaging Practicable Alternative (LEDPA), as required by the Guidelines at 40 Code of Federal Regulations (CFR) 230.10(a) and described below in Section 2.1. This document also will assist the RWQCB in its review of the Project.

In order to provide information for the identification of the recommended LEDPA, this document summarizes relevant Guidelines requirements, describes the Project and the actions that led to its development, and identifies waters of the United States, including wetlands, that occur in the Project area. It describes Initial Alternatives and the No Action Alternative, analyzes the practicability of the four potential Project alternatives (Action Alternatives), and describes the potential impacts of the Action Alternatives to waters of the United States. The four Action Alternatives are:

- Alternative A – Compact Bypass with Narrow Floodplain and South Canal
- Alternative B – Compact Bypass with Consensus-Based Floodplain and Bifurcation Structure, the Preferred Alternative
- Alternative C – Fresno Slough Dam with Narrow Floodplain and Short Canal
- Alternative D – Fresno Slough Dam with Wide Floodplain and North Canal

This document uses the information previously presented in the Draft Environmental Impact Statement/Environmental Impact Report (EIS/R) prepared for the Project by Reclamation and the California State Lands Commission (CSLC; SJRRP 2015a), including project description and wetland impact information. The draft EIS/R was provided to the State and Federal agencies responsible for regulating the Project, including the U.S. Fish and Wildlife Service (USFWS), National Marine Fisheries Service (NMFS), California Department of Water Resources (DWR), California Department of Fish and Wildlife (DFW), EPA, and the Corps.

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2.0 Clean Water Act Section 404 Regulatory Requirements

Section 404 of the CWA (33 USC 1244) establishes a framework for regulating the discharge of dredged or fill material to waters of the United States including adjacent wetlands. The Corps and EPA each have specific responsibilities in the Section 404 regulatory program. The Corps' main role is to administer a program for authorizing individual discharges. The EPA's main role is to develop the Section 404 Guidelines, which the Corps applies when considering whether to authorize a proposed discharge. The EPA promulgated the Guidelines in 1980.

At the core of the Guidelines are four major restrictions on discharges. The Corps would authorize a project only if it complies with each of these restrictions, which are excerpted below.

2.1 Alternatives to the Proposed Discharge

As specified at 40 CFR 230.10(a), a discharge of dredged or fill material may not be permitted if there is a practicable alternative to the proposed discharge that would have less adverse impact on the aquatic ecosystem that does not have other significant adverse environmental consequences.

An alternative is considered practicable if it is available and capable of being done after taking into consideration cost, existing technology, and logistics in light of the overall project purposes. As noted on page 85339 of the Guidelines preamble, "... to be practicable, an alternative must be capable of achieving the basic purpose of the proposed activity." Also, when identifying potential alternatives, "the only alternatives which must be considered are practicable alternatives."

If a project involving a discharge to a special aquatic site[1] is not water-dependent (i.e., does not require access or proximity to, or siting within, the special aquatic site in question to fulfill its basic purpose), then it is presumed that practicable alternatives that do not involve a discharge to a special aquatic site are available. Furthermore, these practicable alternatives are presumed to have less adverse impact to the aquatic ecosystem, unless demonstrated otherwise.

A practicable alternative that has the least adverse impact on the aquatic ecosystem and minimizes other adverse environmental consequences is designated as the LEDPA. Although this term is not used verbatim in the Guidelines, it is commonly used by the Corps and EPA and by State agencies responsible for certifying that a proposed discharge complies with State water quality standards.

[1] Special aquatic sites include sanctuaries and refuges, wetlands, mudflats, vegetated shallows, coral reefs, and riffle and pool complexes.

In summary, the Corps may only authorize a project alternative that it designates as the LEDPA.

2.2 Water Quality Standards/Toxic Effluent Standards/Endangered Species Act

As specified at 40 CFR 230.10(b), a discharge of dredged or fill material is not permitted if it causes or contributes to violations of State water quality standards, violates toxic effluent standards under Section 307 of the CWA, or jeopardizes the continued existence of an endangered or threatened species or results in the likelihood of destruction or adverse modifications to critical habitat under the Federal Endangered Species Act.

2.3 Significant Degradation

As specified at 40 CFR 230.10(c), a discharge of dredged or fill material is not permitted which would cause or contribute to significant degradation of the waters of the United States. Degradation includes adverse effects on: (1) human health through impacts to municipal water supplies, plankton, fish, shellfish, wildlife, and special aquatic sites; (2) life stages of aquatic life and wildlife dependent on aquatic ecosystems; (3) ecosystem diversity, productivity, and loss of fish and wildlife habitat; and (4) recreational, aesthetic, economic values.

2.4 Adverse Impact Minimization

As specified at 40 CFR 230.10(d), a discharge of dredged or fill material is not permitted unless appropriate and practicable steps have been taken which would minimize potential adverse impacts of the discharge on the aquatic ecosystem.

3.0 Project Background

The Project is a Phase 1 component of the overall SJRRP. The SJRRP is the program established to implement the Stipulation of Settlement (Settlement) in the lawsuit known as *Natural Resources Defense Council (NRDC), et al., v. Kirk Rodgers, et al*.

3.1 San Joaquin River Restoration Program

In 1988, a coalition of environmental groups, led by NRDC filed a lawsuit, known as *NRDC, et al., v. Kirk Rodgers, et al.*, challenging the renewal of long-term water service contracts between the United States and the Central Valley Project Friant Division contractors. On September 13, 2006, after more than 18 years of litigation, the Settling Parties, including NRDC, Friant Water Authority, and the U.S. Departments of the Interior and Commerce, agreed on terms and conditions for a Settlement. The Settlement establishes two primary goals:

- **Restoration Goal** – To restore and maintain fish populations in "good condition" in the main stem San Joaquin River below Friant Dam to the confluence of the Merced River, including naturally reproducing and self-sustaining populations of salmon and other fish.
- **Water Management Goal** – To reduce or avoid adverse water supply impacts on all of the Friant Division long-term contractors that may result from the Interim and Restoration flows provided for in the Settlement.

The Settlement establishes a framework for accomplishing the Restoration and Water Management goals that will require environmental compliance, design, construction, and monitoring of projects over a multiple-year period. To achieve the Restoration Goal, the Settlement calls for a combination of channel and structural modifications along the San Joaquin River below Friant Dam, releases of water from Friant Dam to the confluence of the Merced River (referred to as Interim and Restoration flows), and reintroduction of Chinook salmon. To achieve the Water Management Goal, the Settlement calls for recirculation, recapture, reuse, exchange or transfer of the Interim and Restoration flows to reduce or avoid impacts to water deliveries to all of the Friant Division long-term contractors caused by the Interim and Restoration flows.

The SJRRP is the program established to implement the Settlement. Implementing agencies responsible for managing and implementing the SJRRP are Reclamation, USFWS, NMFS, DWR, and DFW. The San Joaquin River Restoration Settlement Act (Act), included in Public Law 111-11, the Omnibus Public Lands Management Act of 2009, authorizes and directs the Secretary of the Interior (Secretary) to implement the terms and conditions of the Settlement.

3.2 Mendota Pool Bypass and Reach 2B Improvements

The Project includes the construction, operation, and maintenance of the Mendota Pool Bypass and improvements in the San Joaquin River channel in Reach 2B (Figure 3-1). The Project consists of a floodplain width which conveys at least 4,500 cubic feet per second (cfs), a method to bypass Restoration Flows around Mendota Pool, and a method to deliver water to Mendota Pool. The Project footprint (Figure 3-2) extends from approximately 0.3 mile above the Chowchilla Bifurcation Structure to approximately 1.7 miles below the Mendota Dam.

The Mendota Pool Bypass would include conveyance of at least 4,500 cfs around Mendota Pool (or the Pool) from Reach 2B to Reach 3. The bypass could be accomplished by constructing a new channel around Mendota Pool or by limiting Mendota Pool to areas outside of the San Joaquin River. This action would include the ability to divert 2,500 cfs to the Pool if water deliveries are required for the San Joaquin River Exchange Contractors (Exchange Contractors) and may consist of a bifurcation structure in Reach 2B. The bifurcation structure would include a fish passage facility to enable up-migrating salmon to pass the structure and a fish screen, if appropriate, to direct out-migrating fish into the bypass channel and minimize fish entrainment to the Pool.

Improvements to Reach 2B would include modifications to the San Joaquin River channel from the Chowchilla Bifurcation Structure to the new Mendota Pool Bypass to provide a capacity of at least 4,500 cfs with integrated floodplain habitat. Levee setbacks along Reach 2B would increase channel and floodplain capacity and provide for floodplain habitat. Floodplain habitat is included along the Reach 2B portion of the Project as required by the Settlement; floodplain habitat is being considered along the bypass channel because Central Valley floodplains have been shown to be of value to rearing juvenile salmon as they migrate downstream (Jeffres et al. 2008, Grosholz and Gallo 2006, Sommer et al., 2001, Sommer et al., 2004). In addition, the SJRRP *Fisheries Management Plan* (SJRRP 2010) and *Minimum Floodplain Habitat Area for Spring and Fall-Run Chinook Salmon* report (SJRRP 2012a) describe that sufficient floodplain habitat is an important feature for meeting salmon population targets.

Improvements included in the project could potentially be implemented in a phased approach to facilitate scheduling and funding. Phased implementation is discussed further in Section 5.3.14.

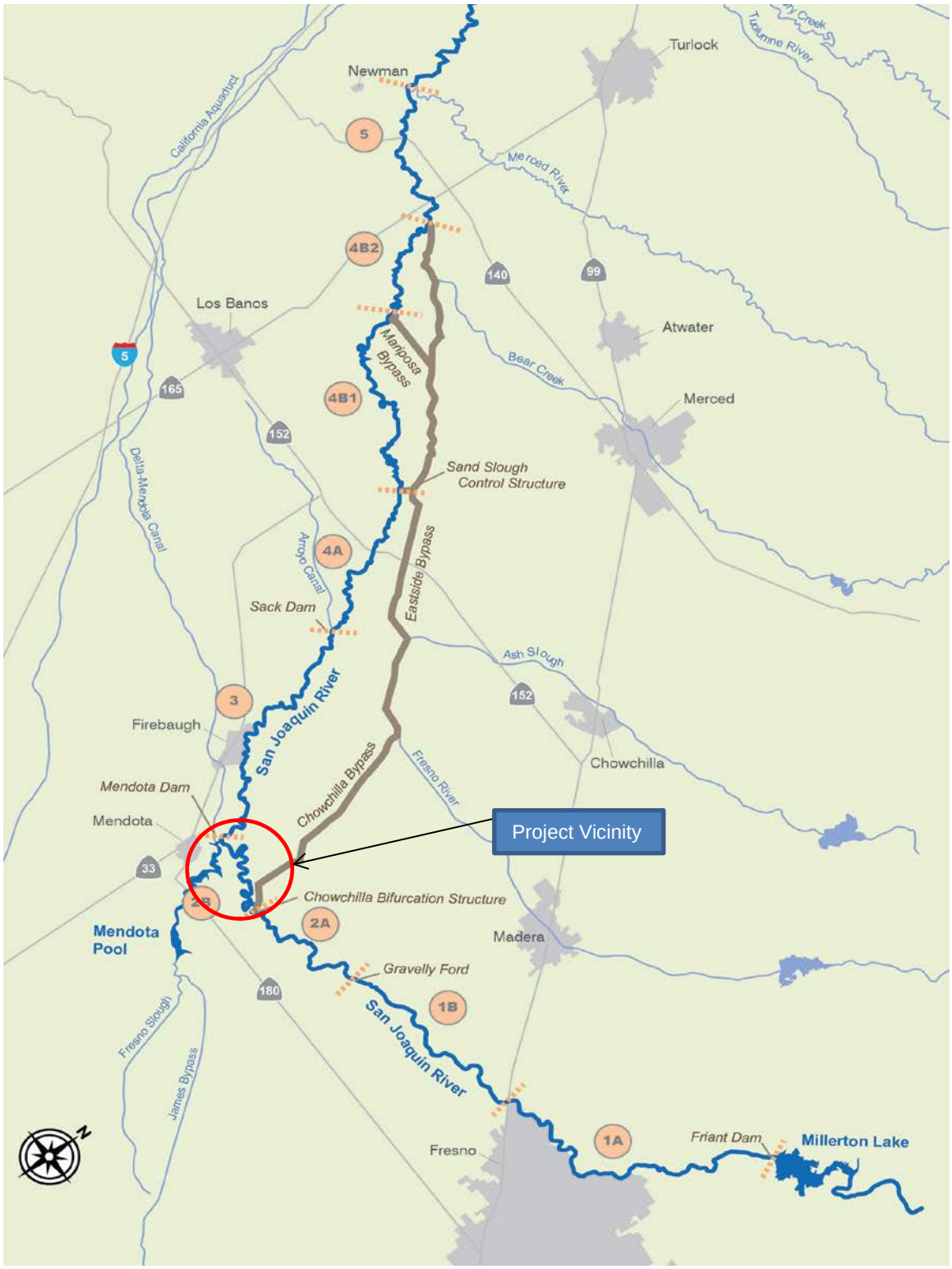

Figure 3-1.
Overview of the SJRRP Restoration Area and the Project Vicinity

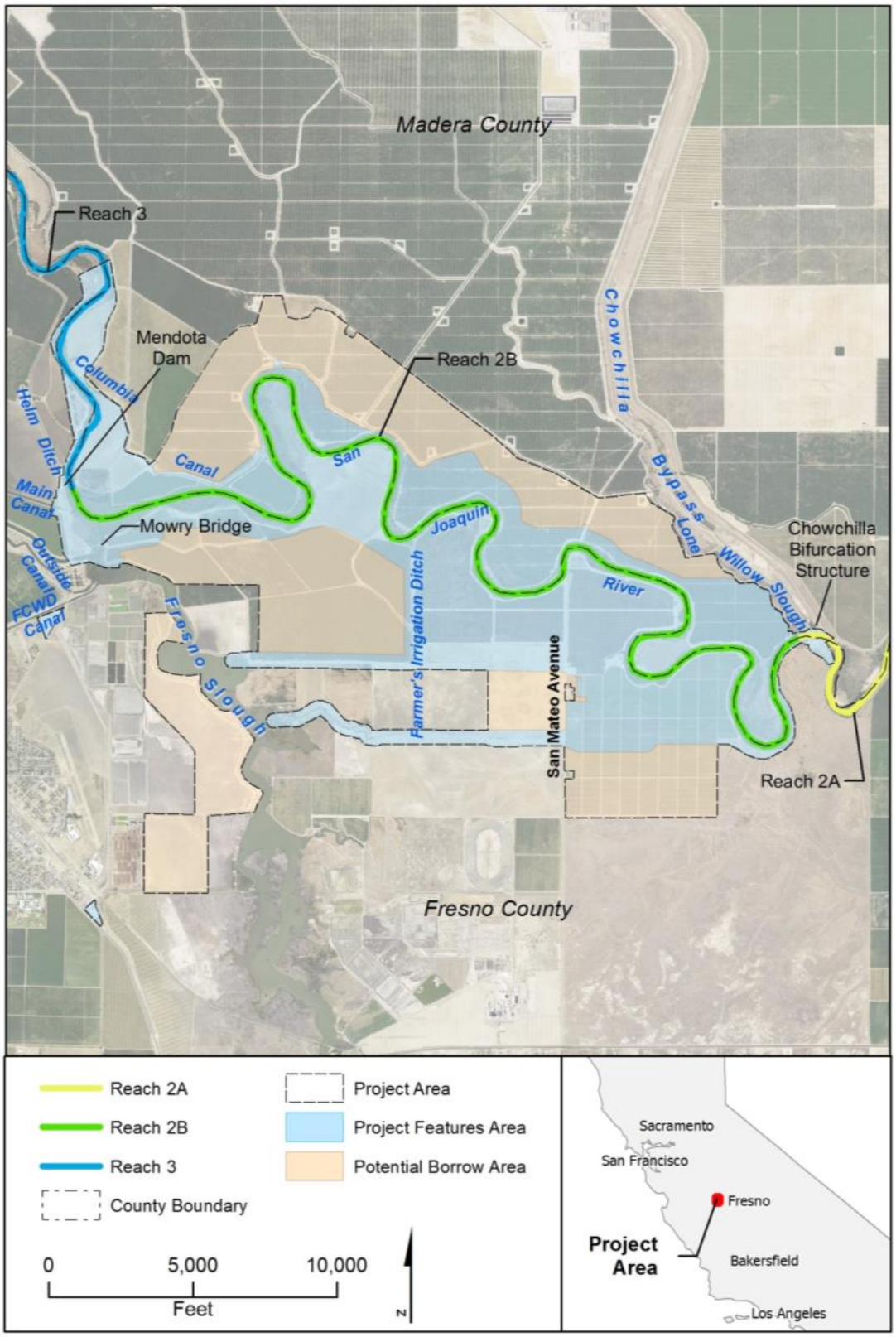

Figure 3-2.
Project Footprint and Vicinity

4.0 Project Purpose

Definitions of "project purpose" are key components of a Section 404(b)(1) document. This section describes the "Basic Project Purpose," which is used to establish water dependency for a project proposing a discharge to a special aquatic site (see Section 2.1). It also describes "Overall Project Purpose," which is the applicant's statement of project goals and objectives and is used to help identify practicable alternatives to the proposed project.

4.1 Basic Project Purpose

For purposes of this document, the basic purpose of the Project is to construct, operate, and maintain the Mendota Pool Bypass and improve the San Joaquin River channel in Reach 2B. Several Project activities (e.g., construction of the bypass channel, floodplain modifications, and fish passage structures) will require access to, proximity to, or siting within areas considered to be special aquatic sites, as defined at 40 CFR 230 Subpart E. In accordance with 40 CFR 230.10(a)(3), the Project's basic purpose, therefore, is considered to be "water dependent." As a result, there is no need in this document to rebut a presumption that there are practicable alternatives to the Project that do not involve a discharge of dredged or fill material to a special aquatic site.

4.2 Overall Project Purpose

The overall project purpose is to implement portions of the Settlement consistent with the Act. Specifically, this Project is intended to implement Paragraphs 11(a)(1) and 11(a)(2) of the Settlement, which are authorized in Section 10004(a)(1) of the Act.

Paragraph 11(a)(1)

> *Creation of a bypass channel around Mendota Pool to ensure conveyance of at least 4,500 cfs from Reach 2B downstream to Reach 3. This improvement requires construction of a structure capable of directing flow down the bypass and allowing the Secretary to make deliveries of San Joaquin River water into Mendota Pool when necessary;*

Paragraph 11(a)(2)

> *Modifications in channel capacity (incorporating new floodplain and related riparian habitat) to ensure conveyance of at least 4,500 cfs in Reach 2B between the Chowchilla Bifurcation Structure and the new Mendota Pool bypass Channel;*

The Settlement specifies the need, which requires modifications to Reach 2B and construction of a bypass around Mendota Pool in support of achieving the Restoration Goal (Settlement Paragraph 2):

> *… a goal of this Settlement is to restore and maintain fish populations in "good condition" in the main stem of the San Joaquin River below Friant Dam to the confluence of the Merced River, including naturally-reproducing and self-sustaining populations of salmon and other fish (the "Restoration Goal").*

Without the Project in Reach 2B, restoration activities would be unlikely to achieve the Settlement goals.

5.0 Project Description

This section describes the project area, the existing conditions in the vicinity of the Project and the major Project elements.

5.1 Project Area Description

The Project study area or "Project area" includes areas that may be affected directly or indirectly by the Project alternatives. The Project footprint comprises the area that could be directly affected by the Project. The Project footprint (township 13S, range 15E), shown in Figure 3-2, has two major components: Reach 2B and the Mendota Pool Bypass. Reach 2B includes the area from the San Joaquin River control structure of the Chowchilla Bifurcation Structure downstream to Mendota Dam.

Potential Project improvements in Reach 2B, which vary by alternative, extend from the Chowchilla Bifurcation Structure on the upstream end to the head of the potential Mendota Pool Bypass channel or to Mendota Dam on the downstream end. However, Reach 2B improvements may also include areas just upstream of the Chowchilla Bifurcation Structure and may continue downstream of the head of the Mendota Pool Bypass or Mendota Dam, as necessary to meet the Project purpose. The lateral extent of the Reach 2B improvements includes lands to the north and south of the San Joaquin River in Reach 2B.

The Mendota Pool Bypass element of the Project alternatives generally includes the area from the downstream end of the Reach 2B improvements to a tie-in location in Reach 3. Improvements for the Mendota Pool Bypass, which vary by alternative, extend from the area south of Mowry Bridge over Fresno Slough to the area north of Mendota Dam where the bypass ties into Reach 3. The Mendota Pool Bypass element of the Project alternatives also includes areas adjacent to and on the west side of Mendota Pool and Fresno Slough and areas to the south of the Reach 2B improvements. Areas indirectly affected by this Project include portions of Reach 3 downstream and Reach 2A upstream that are outside the direct Project footprint.

5.2 Description of Existing Conditions within the Study Area

At the upstream end of the Project, the Chowchilla Bifurcation Structure is used to control and route flood releases from Friant Dam and the upstream watershed into Reach 2B and the Chowchilla Bypass, a flood protection project on the San Joaquin River. Under no-flow conditions, plunge pools (approximately 7 feet deep and 10 feet deep, respectively) can be observed at the downstream base of the Chowchilla Bifurcation Structure in both the San Joaquin River and the Chowchilla Bypass.

Reach 2B ends on the downstream end at the Mendota Dam, which creates Mendota Pool. The Delta-Mendota Canal terminates at the Pool, which distributes water deliveries from the Sacramento-San Joaquin Delta (Delta) to Exchange Contractors via the Main Canal, Helm Ditch, Columbia Canal, Main Lift Canal, and Outside Canal. The Pool is shallow with little storage volume, and the pool elevation is maintained for the purposes of hydraulic head into Fresno Slough. The Pool provides only minimal transitory storage above the operating elevation and, therefore, does not provide substantial flood control protection. During flood releases, the flashboards are removed at Mendota Dam allowing the backwatered Pool to become part of the flowing river.

Flood flows through Mendota Pool are released from Friant Dam, Pine Flat Dam, or both. Friant Dam flood control releases may be diverted into Reach 2B at the Chowchilla Bifurcation Structure, and Pine Flat Dam flood control releases may be diverted into Mendota Pool via the James Bypass and Fresno Slough. Pine Flat Dam flood control releases have priority over Friant Dam flood control releases, so depending on the available capacity in Reach 3, a portion or all of the flow from Reach 2A may be diverted into the Chowchilla Bypass. Pine Flat Dam flood control releases into Mendota Pool occur in wet years (approximately 1 in 5 years with the SJRRP). Accordingly during wet years, flow in Reach 2B may be reduced during flood control releases from Pine Flat Dam.

The Project area includes only one existing private crossing, a dip-crossing at San Mateo Avenue, consisting of a culvert to convey low flows and an earthen embankment supporting the roadbed, which is overtopped during higher flows.

The San Mateo Avenue crossing is the approximate limit of the backwater effects of the Pool. Downstream of San Mateo Avenue, the river channel is inundated as a result of the Pool water surface elevation. Upstream of the crossing, the channel is only wetted during Interim and Restoration flows or flood releases from Friant Dam. Up until the recent past, the Pool and associated river channel were drained approximately every 2 years to inspect and perform maintenance on Mendota Dam. Recent repairs at Mendota Dam have reduced this need to dewater the Pool for dam inspections.

Several water diversions (including Lone Willow Slough and the Columbia Canal), canals, lift stations, and groundwater wells exist within the Project area. Additionally, electrical and gas distribution lines and water pipelines lie within the Project area.

5.2.1 Existing Land Use and Habitat

A narrow corridor of riparian and aquatic habitat exists along the river corridor, levees, and at Mendota Pool; otherwise, land use within and surrounding the Project area is primarily agriculture, with the exception of the water management facilities at the Pool.

The Pool backwater supports perennial riparian vegetation, predominantly willow riparian and cottonwood riparian forest communities with emergent wetland communities. Upstream of San Mateo Avenue and prior to Interim Flows, the channel exhibited a sandy substrate with little to no in-channel vegetation. Vegetation along the

banks of the channel in these areas predominantly consisted of riparian scrub and willow scrub communities.

5.2.2 Existing Fish Population and Habitat Conditions

Prior to the start of Interim Flows in October 2009, Reach 2B upstream of San Mateo Avenue was dry except during flood flows (approximate frequency was every 2 to 3 years), consequently there was very limited in-channel habitat features. The Pool contained mostly introduced fishes and a few native fish. The biennial dewatering of the Pool, which occurred prior to the start of Interim Flows, left the Pool site mostly dry, but some locations held standing water during the several week period the Pool was drained in mid-winter.

The Reach 2B channel bed is composed of unconsolidated fine sand and, prior to Interim Flows, there was little definition of the channel bed, which is typical for sand bed systems. No pool-bar structure or bed features occurred which would typically be used in gravel bed or coarser systems to classify and evaluate fish habitat features (pools, riffles, runs) or conditions (instream cover, overhead cover, etc.). Aquatic habitat in Reach 2B upstream of San Mateo Avenue was limited because there is a long history of the channel being dry. Riparian vegetation was limited to the levees along the channel banks. In the lower portion of Reach 2B, the channel was defined where vegetation had been established along the backwatered portion from the Pool between Mendota Dam and San Mateo Avenue. The Pool was bordered by emergent, wetland and riparian vegetation including mature cottonwood trees. Aquatic habitat in this section of river was affected by the backwatering of Mendota Dam and sedimentation in the Pool.

Since the start of Interim and Restoration flows, Reach 2B has increased inundation and establishment of hydrophytic vegetation. Aquatic habitat between the Chowchilla Bifurcation Structure and San Mateo Avenue has developed into a series of low gradient riffles, flatwater glides, and mid-channel pools and the San Joaquin River arm of Mendota Pool continues to hold water year-round. Pool elevations are typically maintained near capacity.

5.2.3 Existing Structures

Chowchilla Bifurcation Structure

The most upstream structure is the Chowchilla Bifurcation Structure. This structure is used to route flood flows down the Chowchilla Bypass. The bifurcation has two structural components: the San Joaquin River control structure, which spans the San Joaquin River, and the bypass control structure, located at the head of the Chowchilla Bypass. The bifurcation structure has wingwalls bounding four gated bays on each channel. The bays are essentially 20-foot-wide by 18-foot-high box culverts containing a trash rack on the upstream side. The four bays discharge across a row of energy dissipaters (dragons teeth) then over a concrete slab that is bounded on the downstream end by a 2-foot-high concrete weir. Immediately below the concrete weir is a row of riprap sitting against the concrete weir and above the sand bed of Reach 2B. Upstream and downstream of the structure is the sand bed of Reach 2A and 2B, respectively.

San Mateo Avenue Crossing

The present crossing of Reach 2B is a dip crossing or low-water crossing. Flows less than approximately 150 cfs are routed through a culvert beneath the road. At flows above approximately 150 cfs, the road is inundated (Houk 2009). The north (Madera County) portion of the crossing is within public right-of-way, but the south (Fresno County) portion of the crossing is on private land, essentially rendering it a private river crossing.

Mendota Dam and Mendota Pool

Mendota Dam, at the downstream end of Reach 2B, forms a pool approximately 7 miles long to San Mateo Avenue. The downstream 2 to 3 miles of the channel is bordered by mature trees along the north bank. Typically, the Pool receives water from the Delta-Mendota Canal which supplies water to the Helm Ditch, Main Canal, Outside Canal, Main Lift Canal, Fresno Slough, and Columbia Canal. The Pool is shallow and was drained about every 2 years for dam inspection and maintenance. Recent repairs at Mendota Dam have reduced this need to dewater the Pool for dam inspections.

5.3 Elements Common to All Action Alternatives

Action Alternatives would be designed to provide:

- Conveyance of at least 4,500 cfs in Reach 2B and through the Mendota Pool Bypass.
- Diversion of up to 2,500 cfs from Reach 2B into Mendota Pool.

Additionally, some constructed elements are also common to all Action Alternatives. Those elements are described below.

5.3.1 Fish Habitat and Passage

One of the primary focuses of the Action Alternatives is to provide floodplain and riparian habitat to benefit migrating juvenile and adult salmonids and other native fishes. Floodplain and riparian habitats in the Action Alternatives would include a variety of native plant communities suited to the hydrology, soils, and climate of Reach 2B and the San Joaquin Valley. The Action Alternatives also include provision of fish passage at structures for salmonids and other native fish. These structures vary by alternative, but overall include fish screens, fish passage facilities, grade control structures, and bifurcation structures (under certain flows).

5.3.2 Levees

Levees would be required along the Project area to contain Restoration Flows. While the height and footprint of the levees vary according to their locations along the channel and the ground elevation, the capacity, freeboard, and cross-section would be consistent. Localized backwater and redirection effects at Project structures would be considered during design of levee heights. Levees would be designed to maintain 3 feet of freeboard on the levees at 4,500 cfs. Levee alignments maintain a 300-foot buffer zone, where appropriate, between the levee and river channel to avoid impact to levees over time due to potential channel migration.

5.3.3 Seepage Control Measures

Seepage of river water through or under levees is a concern for levee integrity and adjacent land uses. Through-seepage, water that seeps laterally through the levee section, would be addressed through proper levee design and construction (e.g., selection of low porosity materials and proper compaction). Under-seepage, water that seeps laterally by traveling under the levee section, is primarily controlled by the native soils beneath the levee, and seepage control measures would be included where native soils do not provide sufficient control.

5.3.4 Borrow

Borrow material (suitable soils) would primarily be required for the construction of the levees, but it may also be used in the construction of other structures for foundation or backfill material. Levees may be constructed entirely of local borrow material, a mix of local and imported borrow material, or just imported borrow material.

5.3.5 Levee and Structure Protection

Action Alternatives generally provide a minimum 300-foot buffer between the existing channel and the proposed levee, where appropriate and feasible. Locations that require erosion protection in the form of revetment include areas where the 300-foot buffer was not included due to the proximity of existing infrastructure, near the proposed structures, and along river bends less than 300 feet from the levee.

5.3.6 Channel Bank Protection

Action Alternatives could include riparian vegetation, rock vanes, woody materials, revetment, or other measures designed to protect channel banks from erosion. Bank protection measures would be installed in locations susceptible to and likely to experience bank erosion.

5.3.7 Removal of Existing Levees

Removal of portions of the existing levees is included and designed to expand the inundation area of the floodplain out to the proposed levees and improve connectivity between the river channel and proposed floodplain. The locations of existing levee removal would be based upon the hydraulic performance of the channel and floodplain. In certain locations, however, highly desirable existing vegetation (native and sensitive vegetation communities that can serve as seed banks for future vegetation communities) can be found on the existing levees. Where hydraulic performance and connectivity of the floodplain would not be negatively affected, portions of the existing levees with highly desirable vegetation would remain in place.

5.3.8 Floodplain Grading

Floodplain and channel grading can provide benefits to salmon and other native fish by allowing inundation to occur at lower flows, by distributing suitable rearing habitats further into the floodplain, by connecting rearing habitat to primary production areas (shallow water habitat), by providing escape routes during receding flows, and by confining flows to a deeper, narrower channel to limit temperature increases.

5.3.9 Infrastructure for Fish Monitoring

The designs for control structures, fish passage facilities, and fish screens include security fences and gates, mounting hardware, and electrical supply in order to conduct fish monitoring activities. The fish monitoring activities themselves are not included in this Project, and will be addressed in subsequent environmental analysis, as appropriate.

5.3.10 Existing Infrastructure Relocations or Floodproofing

Existing infrastructure such as groundwater wells, pumps, electrical and gas distribution lines, water pipelines, and canals is located in the Project area and would require relocation or floodproofing to protect them from future Restoration Flows and increased floodplain area.

5.3.11 Construction Access

Access for vehicles carrying materials, equipment, and personnel to and from the construction area would be provided via several existing roadways in the Project vicinity. Improvements may be required to upgrade roadways, pavements, and crossings for anticipated construction traffic and loads, provide adequate turning radii and site distances, and to control dust on non-paved roads.

5.3.12 Revegetation of Temporary Disturbance Areas

Areas temporarily disturbed during construction would be restored to their previous contours, if feasible, and then seeded with a native vegetation seed mixture to prevent soil erosion. Some areas, such as borrow areas, may not be feasible to restore previous contours, but these areas would be smoothed and seeded.

5.3.13 Land Acquisition

Additional lands would be acquired to accommodate the floodplain, levees, bypass channel, structures, and borrow. The amount of land acquisition varies with alternative.

5.3.14 Phased Implementation

The Project may utilize a phased approach to implementation of the selected alternative. Phased implementation would involve building selected components of the Project in separate construction phases, allowing Project funding to be secured over time.

5.3.15 Operations and Maintenance

The Project includes long-term operations and maintenance of the proposed facilities and features.

5.3.16 Monitoring Activities

Monitoring activities in Reach 2B could include flow monitoring, groundwater level monitoring, aerial and topographic surveys, vegetation surveys, sediment mobilization and monitoring, and passage and screen effectiveness.

5.3.17 Structure Design and Subsidence

All design work would be completed in general accordance with Reclamation Design Standards, applicable design codes, and commonly accepted industry standards. Where design criteria are missing for a specific project element, either Reclamation would be

consulted for design specifications or standard engineering practice methods would be employed. In addition, ground subsidence effects are anticipated to be experienced in the Project area. During the design process, causes of the observed subsidence, data from previously conducted studies, subsidence locations expected to require special design considerations, anticipated subsidence rates, and methods to mitigate the anticipated ground subsidence would be identified and incorporated into the design.

5.3.18 Environmental Commitments

Environmental commitments are measures or practices adopted by a project proponent to reduce or avoid adverse effects that could otherwise result from project construction or operations. The following section describes additional environmental commitments that would be implemented with the Action Alternatives to avoid potentially adverse environmental consequences. These commitments are consistent with those commitments provided in the Program Environmental Impact Statement/Environmental Impact Report (PEIS/R).

Conservation Strategy

As part of SJRRP implementation, a comprehensive strategy for the conservation of listed and sensitive species and habitats has been prepared, and will be implemented in coordination with USFWS, NMFS, and DFW. The goals of the strategy are as follows:

- Conserve riparian vegetation and waters of the United States, including wetlands
- Control and manage invasive species
- Conserve special-status species

The SJRRP's Conservation Strategy includes conservation measures for biological resources that may be affected by Project actions (summarized in Table 5-1 and described in full in Appendix A). These measures are the same as those presented in the Draft EIS/R (SJRRP 2015a).

Table 5-1.
Conservation Measures for Biological Resources

Identifier	Conservation Measure
VELB	Valley Elderberry Longhorn Beetle
VELB-1	Avoid and minimize effects to species
VELB -2	Compensate for temporary or permanent loss of habitat
BNLL	Blunt-Nosed Leopard Lizard
BNLL-1	Avoid and minimize effects to species
BNLL-2	Compensate for temporary or permanent loss of habitat or species
PLANTS	Other Special-Status Plants
PLANTS-1	Avoid and minimize effects to special-status plants
GGS	Giant Garter Snake
GGS-1	Avoid and minimize loss of habitat for giant garter snake
GGS-2	Compensate for temporary or permanent loss of habitat

Table 5-1.
Conservation Measures for Biological Resources

Identifier	Conservation Measure
WPT	Western Pond Turtle
WPT-1	Avoid and minimize loss of individuals
EAGLE	Bald Eagle and Golden Eagle
EAGLE-1	Avoid and minimize effects to bald and golden eagles (as defined in the Bald and Golden Eagle Protection Act)
SWH	Swainson's Hawk
SWH-1	Avoid and minimize impacts to Swainson's Hawk
SWH-2	Compensate for loss of nest trees and foraging habitat
RAPTOR	Other Nesting Raptors
RAPTOR-1	Avoid and minimize loss of individual raptors
RAPTOR-2	Compensate for loss of nest trees
RNB	Riparian Nesting Birds: Least Bell's Vireo
RNB-1	Avoid effects to species
RNB-2	Avoid, minimize, and compensate for effects to species
MBTA	Other Birds Protected by the Migratory Bird Treaty Act
MBTA-1	Avoid and minimize effects to species
BRO	Burrowing Owl
BRO-1	Avoid loss of species
BRO-2	Minimize impacts to species
BAT	Special-Status Bats
BAT-1	Avoid and minimize loss of species
BAT-2	Compensate for loss of habitat
FKR	Fresno Kangaroo Rat
FKR-1	Avoid and minimize effects to species
FKR-3	Compensate for temporary or permanent loss of habitat or species
SJKF	San Joaquin Kit Fox
SJKF-1	Avoid and minimize effects to species
PL	Pacific Lamprey
PL-1	Avoid and minimize effects to species
RHSNC	Riparian Habitat and Other Sensitive Natural Communities
RHSNC-1	Avoid and minimize loss of riparian habitat and other sensitive natural communities
RHSNC-2	Compensate for loss of riparian habitat and other sensitive natural communities
WUS	Waters of the United States/Waters of the State
WUS-1	Identify and quantify wetlands and other waters of the United States
WUS-2	Obtain permits and compensate for any loss of wetlands and other waters of the United States/waters of the State
INV	Invasive Plants
INV-1	Implement the Invasive Vegetation Monitoring and Management Plan
CP	Conservation Plans
CP-1	Remain consistent with approved conservation plans

Table 5-1.
Conservation Measures for Biological Resources

Identifier	Conservation Measure
CP-2	Compensate effects consistent with approved conservation plans
GS	Southern Distinct Population Segment of North American Green Sturgeon
GS-1	Avoid and minimize loss of habitat and individuals
CVS	Central Valley Steelhead
CVS-1	Avoid loss of habitat and risk of take of species
CVS-2	Minimize loss of habitat and risk of take of species
SRCS	Central Valley Spring-Run Chinook Salmon
SRCS-1	Avoid and minimize loss of habitat and individuals
EFH	Essential Fish Habitat (Pacific Salmonids)
EFH-1	Avoid loss of habitat and risk of take of species
EFH-2	Minimize loss of habitat and risk of take from implementation of construction activities

Minimize Flood Risk from Restoration Flows

The SJRRP's strategy for minimizing flood risk is to limit the maximum downstream extent and rate of Interim and Restoration flows for the given reach to then-existing channel capacities. This strategy is incorporated by reference from the PEIS/R (SJRRP 2011a, pages 2-22 through 2-28) and summarized in Section 2.2.10 of the EIS/R. These Program-wide commitments are documented in the PEIS/R Record of Decision (ROD), and no new Project-level actions to minimize flood risk from Interim and Restoration flows are being proposed.

Other Environmental Commitments

The Project proponents will implement additional Project-specific measures to avoid potentially adverse environmental consequences for the resource areas listed below (see Section 2.2.10 of the EIS/R) (SJRRP 2015a). Many of the Project-specific measures are consistent with those specified in the PEIS/R ROD.

- Air Quality
- Cultural Resources
- Geology and Soils
- Hydrology – Groundwater
- Hydrology – Surface Water Resources and Water Quality
- Land Use Planning and Agricultural Resources
- Noise and Vibration
- Paleontological Resources
- Public Health and Hazardous Materials
- Recreation

- Transportation and Traffic
- Utilities and Service Systems
- Visual Resources

Permitting

Reclamation will obtain all necessary permits, as required by law. Implementation of the Project may require the permits and approvals described in Table 5-2. In general, Federal and State actions (permit issuance) will require a signed ROD (National Environmental Policy Act [NEPA]) and findings, EIR certification, and Notice of Determination documents (California Environmental Quality Act [CEQA]). Additional information on permit acquisition procedures, submittal package requirements, critical issues, timing, and permit fees is discussed in the Project's Regulatory Compliance Technical Memorandum (SJRRP 2011b).

Table 5-2.
Summary of Permits and Approvals that May be Required for the Project

Agency and Associated Permit or Approval	Lead Agency for Submittal
Corps Clean Water Act Section 404 Individual Permit Rivers and Harbors Act Section 10 Permit Rivers and Harbors Act Section 14 Permit (Section 408) 33 Code of Federal Regulations 208.10	Reclamation
USFWS/NMFS Endangered Species Act Section 7 Consultation Magnuson-Stevens Fisheries Conservation and Management Act	Reclamation
USFWS Fish and Wildlife Coordination Act Report	USFWS/NMFS
SHPO/ACHP National Historic Preservation Act, Section 106	Reclamation
U.S. Coast Guard General Bridge Act and Rivers and Harbors Act Section 9	Reclamation
Central Valley RWQCB Clean Water Act Section 401 Water Quality Certification	Reclamation
SWRCB/Central Valley RWQCB Clean Water Act Section 402 Construction General Permit	Reclamation
SWRCB Amended water rights	Reclamation
CSLC Land Use Lease	Reclamation
SJVAPCD Air Impact Analysis Regulation VIII Dust Control Plan Federal Clean Air Act	Reclamation
Fresno/Madera Counties Williamson Act Contracts Land Use/Zoning	Reclamation

Key:
ACHP = Advisory Council on Historic Preservation
Central Valley RWQCB = Central Valley Regional Water
Reclamation = U.S. Department of the Interior, Bureau of Reclamation

Table 5-2.
Summary of Permits and Approvals that May be Required for the Project

Agency and Associated Permit or Approval	Lead Agency for Submittal

Quality Control Board
Corps = U.S. Army Corps of Engineers
CSLC = California State Lands Commission
NMFS = National Marine Fisheries Service
SHPO = State Historic Preservation Officer
SJVAPCD = San Joaquin Valley Air Pollution Control District
SWRCB = State Water Resources Control Board
USFWS = U.S. Fish and Wildlife Service

6.0 Jurisdictional Waters in the Project Area

This chapter describes the environmental setting for wetlands and other non-wetland waters of the United States in the Project area as analyzed in the EIS/R. The EIS/R used the following wetland types to describe the wetland and aquatic ecosystem in the Action Area of each Action Alternative: Riparian Wetlands, Wet Meadows, Marshes, and Non-Wetland Waters of the United States. At the request of the Corps, the Cowardin Classification System was used to describe the aquatic ecosystem in the Action Area of the preferred alternative (Alternative B) in the Preliminary Jurisdictional Wetland Delineation Report. The Cowardin Classification System is not used in this document because it has not been applied to Alternatives A, C, or D and because the classification terminology cannot be easily translated; considerable professional judgment and on-the-ground experience was used to re-categorize the preferred alternative EIS/R wetlands into the Cowardin Classification System. Table 6-1 includes both the EIS/R and Cowardin terminology.

Table 6-1.
EIS/R and Cowardin Terminology

EIS/R Wetland Type	Cowardin Classification (in Jurisdictional Delineation)
Riparian Wetlands	Palustrine, Forested, Broad-Leaved Deciduous (PFO1)
	Palustrine, Scrub-Shrub, Broad-Leaved Deciduous (PSS1)
	Riverine, Intermittent, Unconsolidated Shore, Vegetated (R4US5)
Wet Meadows	Lacustrine, Littoral, Unconsolidated Shore, Vegetated (L2US5)
	Palustrine, Emergent, Persistent (PEM1)
	Palustrine, Scrub-Shrub, Broad-Leaved Deciduous (PSS1)
Marshes	Palustrine, Emergent, Persistent (PEM1)
Non-Wetland Waters of the United States	Lacustrine, Limnetic, Unconsolidated Bottom, Mud (L1UB3)
	Riverine, Lower Perennial, Unconsolidated Bottom, Sand (R2UB2)

6.1 Environmental Setting

During the past century, the aquatic resources of the San Joaquin River and the Project area have undergone substantial changes because of human related activities. Extensive wetland areas were drained or filled. Many introduced species have spread and contributed to elimination or marginalization of native species. The decline of wetlands and associated native species has become a matter of public concern.

6.1.1 Existing Conditions

Biological resources addressed in this section include wetlands and other non-wetland waters of the United States. Existing conditions are the baseline biological resource conditions at the time of the Notice of Preparation/Notice of Intent distribution in July 2009. The baseline condition of these biological resources was determined through review of scientific literature, existing data sources, and field wetland delineations. In the case of wetlands, field data were collected at later dates, after the start of Interim Flows. Therefore, the best available information to describe existing conditions was typically from the period after the start of Interim Flows. Interim Flows substantially amplified flows in the river and elevated ordinary high water marks (OHWM).[2]

Three categories of potential jurisdictional wetlands were identified in the Project area, as well as potential other waters of the United States. The three wetland categories were riparian wetland, wet meadow, and marsh. Table 6-2 summarizes the acreage of each category of potential jurisdictional wetland and other waters of the United States in the Project area. The DFW considers riparian wetland, wet meadow, and marsh as sensitive natural communities due to their limited distribution in California (DFW 2009; Hickson 2009). These wetland habitat types are described below.

Table 6-2.
Project Area Wetlands and Waters of the United States

Wetland and Non-Wetland Type	Area (acres)
Riparian Wetlands	181.3
Wet Meadows	54.5
Marshes	81.3
Non-Wetland Waters of the United States	473.3
Total Riparian, Wetlands, and Other Waters	790.4

Riparian Wetlands

There are two primary types of riparian wetlands in the Project area – riparian forest and riparian scrub. They are described and analyzed together because they typically co-occur.

Riparian forest consists of the Fremont cottonwood forest (*Populus fremontii* forest alliance) and Oregon ash groves (*Fraxinus latifolia* forest alliance), and these typically occur along levees, floodplain terraces, and in concave depressions. At higher elevation and better drained soils, Fremont cottonwood forest dominates and integrates with sandbar and black willow.

Riparian scrub usually occurs in disturbed habitats along ditches and levees. Riparian scrub vegetation grows 10 to 30 feet tall and is dominated by the following vegetation alliances: black willow thickets (*Salix gooddingii* woodland alliance), buttonwillow thickets (*Cephalanthus occidentalis* shrubland alliance), red willow thickets (*Salix*

[2] The OHWM is defined as the upper boundary of the active river channel along the bank and by lack of vegetation below it.

laevigata woodland alliance), arrow weed thickets (*Pluchea sericea* shrubland alliance), blue elderberry stands (*Sambucus nigra* shrubland alliance), California rose briar patches (*Rosa californica* shrubland alliance), sandbar willow scrub (*Salix exigua* shrubland alliance) and silver bush lupine scrub (*Lupinus albifrons* shrubland alliance). Black willow prevails at lower elevations near the bankfull elevation[3] in areas dominated by poorly drained soils and flat topography. Mixed marsh and wet meadow species often occur in the adjacent understory in the vicinity of the riparian wetlands.

Wet Meadows

Meadows are herbaceous communities dominated by mixtures of perennial grasses and forbs with other grass-like species, such as rushes (*Juncus* species) and sedges (*Carex* species). Some meadows in the Project area include scattered riparian shrubs and trees, but do not contain enough woody vegetation to be included in the riparian scrub or riparian woodland wetland categories. Wet meadows are often located adjacent to dry meadows and other upland areas that are higher above the groundwater table. They typically include flat or concave surface relief and occur in low-lying troughs and basins with poorly drained soils near the San Joaquin River or its tributaries. These site characteristics help maintain extended periods of soil saturation or flooding during the growing season. The vegetation alliances that occur in the wet meadow wetlands are yerba mansa meadows (*Anemopsis californica* herbaceous alliance), creeping rye grass turfs (*Leymus triticoides* herbaceous alliance), salt grass flats (*Distichlis spicata* herbaceous alliance) and non-native annual grasslands.

Wet meadows occur throughout the Project area and are sometimes used for livestock grazing. They occur in swales, drainages, and on lower riparian terraces. These wetlands receive water from the high water table, overbank flooding and sheet drainage from excessive runoff during winter, spring, and early summer. Tarplant (*Centromadia pungens*), yerba mansa (*Anemopsis californica*), alkali heath (*Frankenia grandiflora*), salt grass (*Distichlis spicata*), and creeping wildrye (*Leymus triticoides*) often occur in wet meadows in the Project area. The higher quality wetlands of this type are located in the downstream portion of the reach, near Mendota Pool.

Marshes

The marsh wetlands in the Project area consist of mixed marsh vegetation alliances that are dominated by annual and perennial emergent vegetation with varying amounts of herbs and grass-like species. The vegetative cover is often very dense. In contrast to meadow communities, which have seasonally saturated soils, marsh communities have saturated or inundated soils throughout most of the year, except in some cases, during the dry months of late summer. River water retained by the Mendota Dam is the principal source of water for marshes in the Project area. The vegetation alliances that were observed in the marsh wetlands are California bulrush marsh (*Schoenoplectus californicus* herbaceous alliance), pale spike rush marshes (*Eleocharis macrostachya* herbaceous alliance) and cattail marshes (*Typha* species herbaceous alliance).

[3] The bankfull elevation occurs where the stream completely fills its channel at maximum capacity.

Potential Non-Wetland Other Waters of the United States

Additional aquatic elements in the Project area were identified as potential, jurisdictional non-wetland other waters of the United States based on the presence of defined bed and bank, drift lines and/or OHWM. These features (typically, the river channel between the OHWMs, areas of backed up water upstream of Mendota Dam, non-maintained irrigation and drainage ditches, and other small tributaries in the Project area) were mapped using a combination of field measurements and aerial photography. These waters of the United States lack hydrophytic vegetation[4] typically required to qualify as a wetland. Their limits are set by the OHWM. As directed by the Corps, the OHWM for potential other waters of the United States that are connected to the river is defined by the level on the bank that water reached during the highest Interim Flows in 2010. The limits of the OHWM for historical natural water features that are no longer connected to the river is indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas (Corps 2005). Actively managed agricultural irrigation ditches, stock ponds and larger agricultural ponds were not considered other waters of the United States.

[4] Hydrophytic vegetation refers to plants that are adapted to live in saturated soil, flooded areas, or high groundwater conditions.

7.0 Project Alternatives

Reclamation evaluated a wide range of alternatives that could meet the Project purpose. This section describes the alternatives evaluated and eliminated during these efforts. It also describes the alternatives most recently analyzed in the EIS/R and retained herein for further discussion in Chapter 8.0.

7.1 Alternatives Eliminated

Formulation of a range of Project alternatives began with a review of Settlement provisions for achieving the Restoration and Water Management goals and the Settlement provisions for the Reach 2B and Mendota Pool Bypass components. This was followed by preparing the purpose, need, and objectives; developing criteria for including actions in the Project alternatives; defining planning and implementation constraints; and identifying related projects and opportunities associated with achieving the purpose and need. These steps were applied to actions identified in Settlement provisions and to comments received during the public scoping process to identify a range of alternatives to be addressed. As a result of this process, several potential actions were eliminated from consideration, and the reasonable range of initial alternatives was identified. This process and the alternatives eliminated from consideration are summarized here and described in greater detail in the Project Description Technical Memorandum, Attachment A – Initial Alternatives Evaluation (SJRRP 2012b).

7.1.1 Formulation of Initial Alternatives

The Initial Alternatives were formulated based on existing information and data, preliminary engineering analyses and screening, as well as input from Program Work Groups, stakeholders, and the public. Individual and group landowner meetings were held to present and obtain input on the initial options presented. One of the guiding Project objectives and subsequent analyses pertain to flow conveyance. A one-dimensional hydraulic model was completed during the development of initial channel/floodplain options to examine the largest range of practical and feasible floodplain widths given a reasonable range of management and habitat restoration strategies. Initial screening involved reviewing the options for consistency with the Settlement requirements and for technical feasibility. Any option deemed technically infeasible or beyond the scope of the Settlement or contrary to its requirements were not carried forward for further consideration.

7.1.2 Description of Initial Alternatives

The Initial Alternatives include five floodplain options (Floodplain Initial Alternatives) and three options to bypass water around Mendota Pool (Bypass Initial Alternatives). The Initial Alternatives were designed such that one Floodplain Initial Alternative could be paired with one Bypass Initial Alternative to create a complete Project Alternative. All paired combinations of the Initial Alternatives would meet the Settlement Restoration

Goal of providing suitable passage conditions for adult and juvenile salmonids and transient rearing habitat for juvenile salmonids. All paired combinations of the Initial Alternatives would also meet the requirements of the Project-specific improvements in the Settlement, namely to bypass Mendota Pool, convey at least 4,500 cfs in the Mendota Pool Bypass, design in-channel and levee structures that allow the Secretary to make deliveries of San Joaquin River water into Mendota Pool when necessary, design for channel and floodplain capacity of at least 4,500 cfs in Reach 2B between the Chowchilla Bifurcation Structure and the new Mendota Pool bypass, and incorporate new floodplain and related riparian habitat between the Chowchilla Bifurcation Structure and the new Mendota Pool bypass channel.

The Floodplain Initial Alternatives include building levees capable of conveying flows up to 4,500 cfs and restoring floodplain habitat to provide benefit to salmonids and other native fishes in Reach 2B. The purpose of the floodplain is to provide riparian and floodplain habitat and support the migration and transient rearing of salmonids and other native fishes in Reach 2B. Five levee alignments (FP-1 through FP-5) with varying widths and varying amounts of floodplain grading were considered and are summarized in Table 7-1 below. FP-1 was the narrowest Floodplain Initial Alternative with an approximate average floodplain width of 2,340 feet. It provided the least amount of floodplain acreage and rearing habitat but also requiring the least amount of land acquisition. The constricted conditions of this narrow floodplain would result in the deepest inundation depths and poor quality floodplain. FP-2 was the second narrowest Floodplain Initial Alternative with an approximate average floodplain width of 3,070 feet. FP-2 would provide a moderate amount of good-quality floodplain habitat resulting in sufficient acres of the very shallow water habitat for primary production as well as sufficient acres of habitat that support direct rearing. FP-3 had the same levee alignments as FP-2 but included grading on the floodplain to establish greater heterogeneity of water depths on the floodplain. FP-4 was the second widest floodplain with an approximate average floodplain width of 4,200 feet. Finally, FP-5 was the widest floodplain with an approximate average floodplain width of 5,600 feet. FP-5 would provide the most floodplain acreage, but would also require the most land acquisition.

The Bypass Initial Alternatives include construction of channels and structures capable of conveying 4,500 cfs of Restoration Flows around the Mendota Pool and providing fish passage for salmonids and other native fishes between Reach 2A and Reach 3. The bypass will provide upstream and downstream passage of juvenile Chinook salmon and upstream passage of adult Chinook salmon, as well as passage for other native fishes, while isolating Mendota Pool from Restoration Flows. Three bypass options (Settlement Alignment, Compact Bypass, and Fresno Slough Dam) were considered and are summarized in Table 7-1 below. The Settlement Alignment would convey 4,500 cfs around the Mendota Pool consistent with the location and layout of the channel as described in exhibits created during negotiation of the Settlement. This Initial Alternative would include excavating the bypass channel, constructing levees and in-channel structures, relocating or modifying existing infrastructure, and acquiring approximately 710 acres of land. The Compact Bypass would convey 4,500 cfs around the Mendota Pool by constructing a channel just south of the Columbia Canal. This Initial Alternative includes excavating the bypass channel, constructing levees and in-channel structures,

removing existing levees, relocating or modifying existing infrastructure, and acquiring approximately 240 acres of land. The Fresno Slough Dam would convey 4,500 cfs around the Mendota Pool by constructing a dam across Fresno Slough which would contain Mendota Pool and using the existing river channel to convey Restoration Flows. This Initial Alternative includes removing a portion of river sediments currently stored behind Mendota Dam, constructing a dam on Fresno Slough, constructing a water delivery canal, constructing levees, removing existing levees, relocating or modifying existing infrastructure, and acquiring approximately 36 acres of land.

Table 7-1.
Comparison of Project Initial Alternatives

	Upfront Costs					Channel Stability	Seepage impacts		
	Capital Improvement	Land	Rearing Habitat (>1.0 feet inundation at 2,500 cfs; acres)	Shallow Water Habitat Quality (1=poor, 2=moderate, 3=good)	Average Floodplain Width (feet)	Potential for lateral migration to impact levees (estimated erosion protection cost)	Acres of land in which groundwater levels rise above 5-foot monitoring threshold	Acres of land in which groundwater levels rise above 7-foot monitoring threshold	Total Farmland Removed from Production (acres)
FP-1	$194,430,000	$15,300,000	373	1	2340	$1,935,000	490	580	400.5
FP-2*	$192,480,000	$19,800,000	482	3	3070	$1,123,000	330	390	658.7
FP-3	$194,780,000	$19,800,000	481	3	3070	$1,123,000	330	390	658.7
FP-4*	$218,110,000	$27,300,000	585	2	4200	$315,000	300	360	1159.2
FP-5	$266,900,000	$36,300,000	762	1	5600	$130,000	230	320	1797.1
Settlement Alignment Bypass	$225,370,000	$13,000,000	58	1	N/A	$8,455,000	0	0	717.8
Compact Bypass*	$234,970,000	$ 7,000,000	-91	1	N/A	$7,824,000	0	0	158.3
Fresno Slough Dam*	$375,990,000	$ 8,890,000	39	1	N/A	$2,306,000	0	0	389.1

*Initial alternatives carried forward to EIS/R

7.1.3 Screening of Initial Alternatives

Criteria for the Floodplain Initial Alternatives and Bypass Initial Alternatives were created independently so that the Floodplain Initial Alternatives could be scored amongst themselves and likewise for the Bypass Initial Alternatives. The intent was to allow any Floodplain Initial Alternative to be combined with any Bypass Initial Alternative during development of the final Action Alternatives without the need to evaluate all possible combinations. Initial Alternatives were evaluated on the basis of flow conveyance and operations, fish habitat and passage, habitat restoration, geomorphology and sediment, groundwater, land use, economics, and socioeconomics, and costs. The criteria were developed to evaluate whether the Initial Alternatives meet the Project purpose.

Based on the Initial Alternative evaluation, three Initial Alternatives performed poorly and were therefore eliminated from further consideration:

- **FP-1** would not effectively meet the Project purpose relative to other options because it would result in a confined channel system with high velocities and scour along the corridor requiring expensive bank revetment. Vegetation could be difficult to establish, and water depths would often be too deep to provide effective floodplain rearing and primary production benefits. FP-1 would provide low amounts of rearing habitat, poor quality shallow water habitat, and low amounts of restoration area. It also had a relatively greater risk of channel instability and relatively larger nuisance seepage impacts.
- **FP-5** would not effectively meet the Project purpose relative to other options because it would result in large areas too shallow and dry to provide effective floodplain rearing and primary production benefits. FP-5 would provide poor quality shallow water habitat and would have relatively high restoration and land costs. Relatively greater land would be removed from production. There would be limited additional fish habitat and passage benefits for the added costs and FP-5 would create the potential for fish strandings.
- The **Settlement Alignment** would not effectively meet the Project purpose relative to other options because it provides less restoration area than the Compact Bypass but with larger land requirements. It also provides minimal additional shallow water or rearing habitat and poses a relatively greater risk of channel instability.

Of the remaining Initial Alternatives, FP-3 differed from FP-2 only in grading options and was nested within FP-2 as a single alternative. The Initial Alternatives carried forward for further evaluation were:

- FP-2/FP-3, the Narrow Floodplain;
- FP-4, the Wide Floodplain;
- Compact Bypass; and
- Fresno Slough Dam.

7.1.4 Formulation of Action Alternatives

Following the Initial Alternatives evaluation, Initial Alternatives for each component (Floodplain and Bypass) were combined together to form complete Action Alternatives. Each of the four Action Alternatives developed for the Project consists of a floodplain width that would pass 4,500 cfs, a method to bypass Restoration Flows around Mendota Pool, and a method to deliver water to Mendota Pool.

Subsequent to the initial development of the Action Alternatives, an additional floodplain alignment was created. The Consensus-Based Floodplain was a refinement in the levee alignment based upon those lands located within the Narrow and Wide floodplains owned by willing sellers. This area constitutes the Project footprint for the Consensus-Based Floodplain and would be approximately 4,200 feet wide on average, equivalent to the average width of the Wide Floodplain (FP-4).

The Initial Alternatives were combined into the Action Alternatives as follows:

- Alternative A: Compact Bypass with Narrow Floodplain (FP-2/FP-3) and South Canal.
- Alternative B: Compact Bypass with Consensus-Based Floodplain and Bifurcation Structure.
- Alternative C: Fresno Slough Dam with Narrow Floodplain (FP-2/FP-3) and Short Canal.
- Alternative D: Fresno Slough Dam with Wide Floodplain (FP-4) and North Canal.

7.1.5 No-Action Alternative

The conditions under the No-Action/No-Project Alternative (hereafter called the No-Action Alternative) are the conditions that are predicted to exist in the Project area during the planning period if the Project is not implemented. The No-Action Alternative assumes that other components of the SJRRP, as described in the 2012 Record of Decision, and other reasonably foreseeable actions consistent with current management direction expected to occur in the Project area, would be implemented.

The No-Action Alternative generally assumes no channel or structural improvements would be made in Reach 2B, and Restoration Flows would be reduced to not exceed the existing Reach 2B capacity. It is assumed for the No-Action condition that agriculture would continue, and cropland would be the dominant cover type, consistent with the existing condition.

Under this alternative, the Project would not be implemented. The No-Action Alternative is not consistent with the Settlement and would not meet the Project purpose.

The No Action Alternative fails to meet any of the elements of the Project purpose and is therefore eliminated from further discussion. The No Action Alternative will not be discussed in the subsequent sections.

7.2 Alternatives Retained for Further Discussion

This document provides information for the evaluation of four Action Alternatives to implement the Project. Of the four Action Alternatives, there are two methods of bypassing Restoration Flows around Mendota Pool, two floodplain widths, and four ways to divert water into Mendota Pool. Project alternatives include the following:

- Alternative A (Compact Bypass with Narrow Floodplain and South Canal).
- Alternative B (Compact Bypass with Consensus-Based Floodplain and Bifurcation Structure), the Preferred Alternative.
- Alternative C (Fresno Slough Dam with Narrow Floodplain and Short Canal).
- Alternative D (Fresno Slough Dam with Wide Floodplain and North Canal).

Each of the Action Alternatives consists of a floodplain width which passes 4,500 cfs, a method to bypass Restoration Flows around Mendota Pool, and a method to deliver water to Mendota Pool. Action Alternatives are considered to comply with the terms of the Settlement, substantially meet the Project purpose, and have benefits potentially offsetting their impacts.

7.2.1 Alternative A (Compact Bypass with Narrow Floodplain and South Canal)

Alternative A (Compact Bypass with Narrow Floodplain and South Canal) would construct a channel between Reach 2B and Reach 3, the Compact Bypass channel, in order to bypass the Mendota Pool. Restoration Flows would enter Reach 2B, flow through the reach, then downstream to Reach 3 via the Compact Bypass channel. A canal to convey San Joaquin River water deliveries to Mendota Pool, the South Canal, would be built. The San Joaquin River control structure at the Chowchilla Bifurcation Structure would be removed, and a bifurcation structure would be built at the head of the South Canal to control flood diversions into the Chowchilla Bypass and water delivery diversions into Mendota Pool. Fish passage facilities and a fish screen would be built at the South Canal bifurcation structure to provide passage around the structure and prevent fish being entrained in the diversion. A fish barrier would be built in Reach 3 to direct up-migrating fish into the Compact Bypass channel. A new crossing would be built at the San Mateo Avenue crossing. See Figure 7-1 and Figure 7-2 for a plan view of the alternative's features.

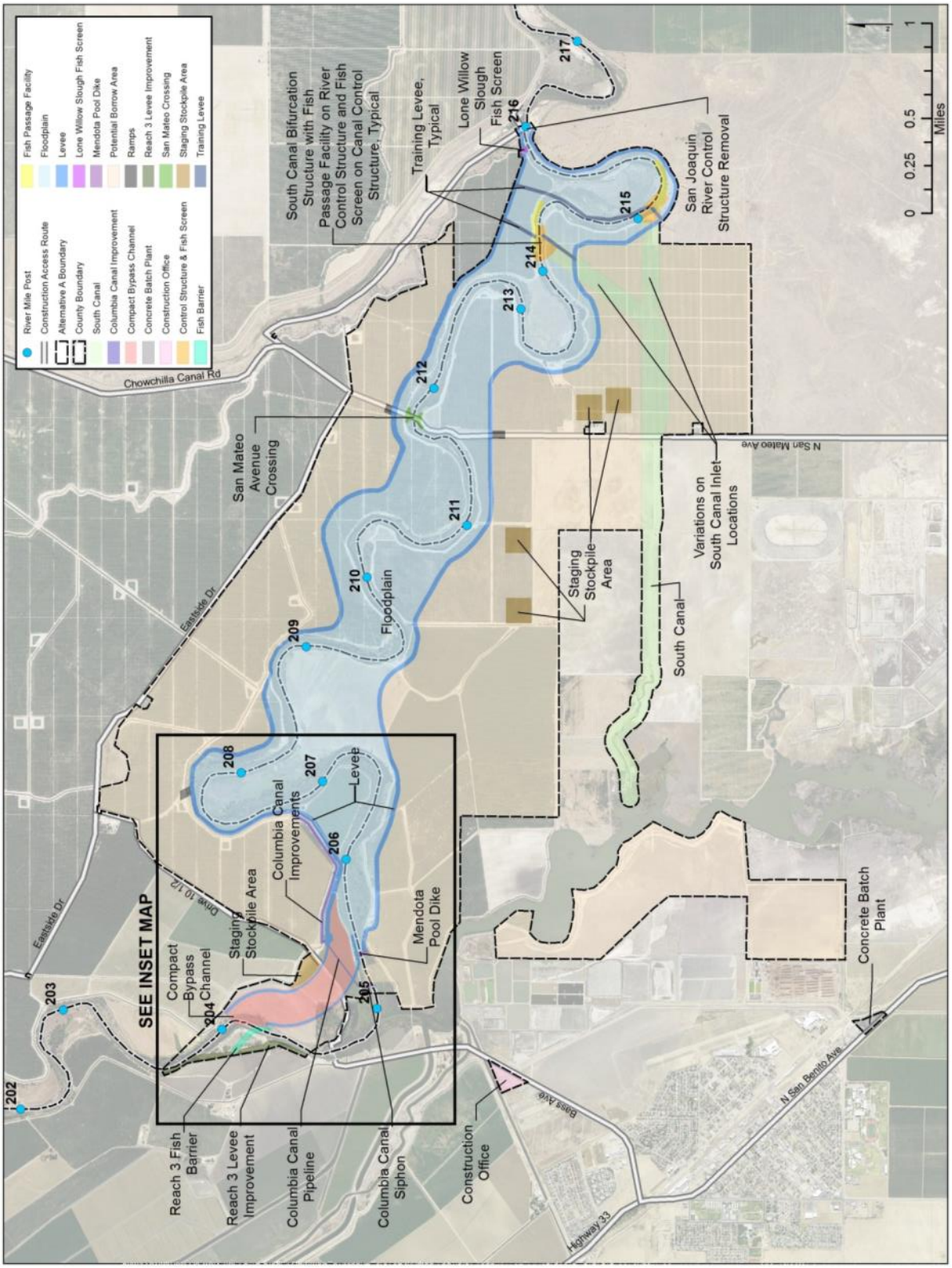

Figure 7-1.
Plan View of Alternative A
(Compact Bypass with Narrow Floodplain and South Canal)

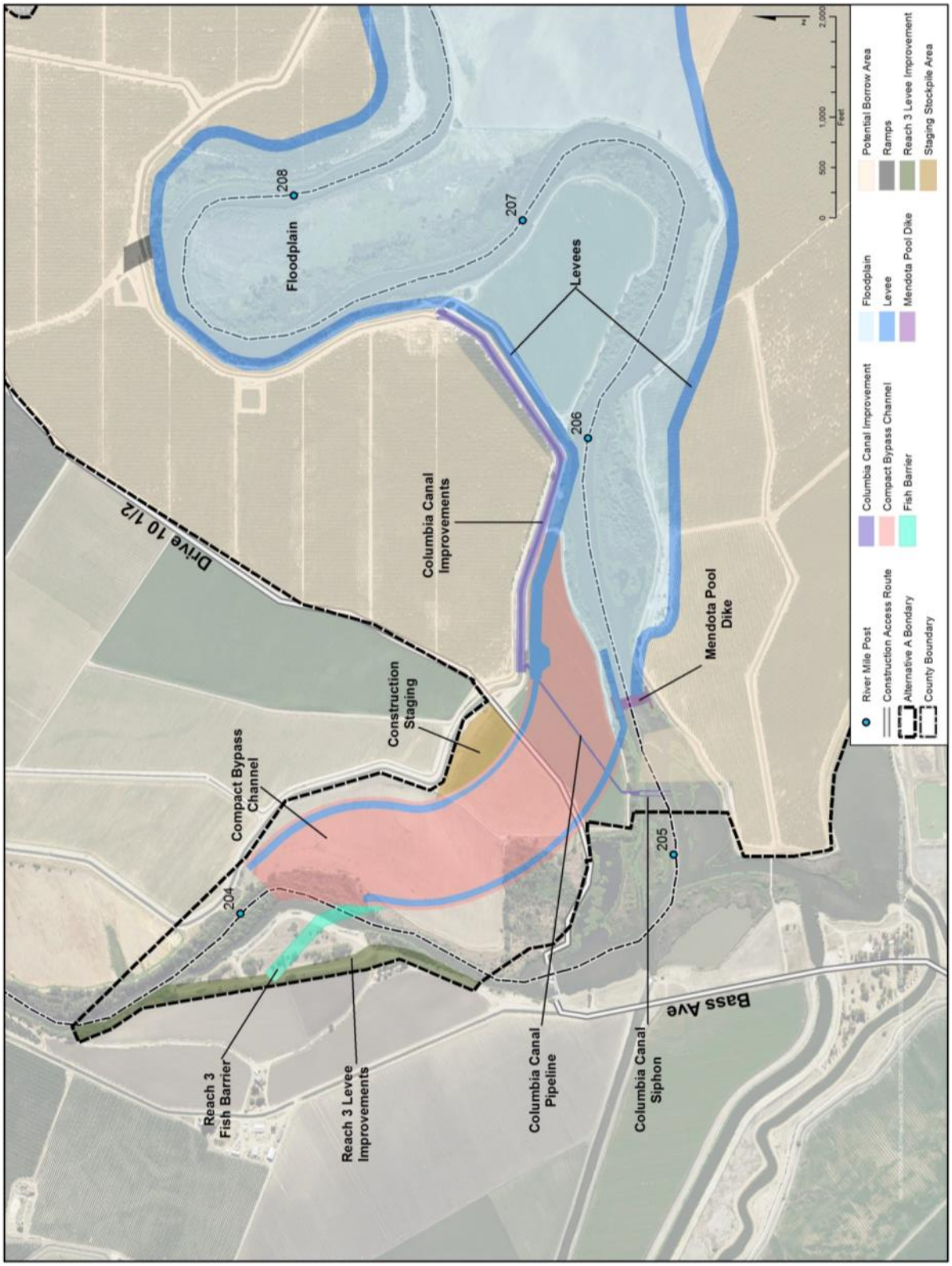

Figure 7-2.
Inset Map of Alternative A
(Compact Bypass with Narrow Floodplain and South Canal)

7.2.2 Alternative B (Compact Bypass with Consensus-Based Floodplain and Bifurcation Structure), the Preferred Alternative

Alternative B (Compact Bypass with Consensus-Based Floodplain and Bifurcation Structure), the preferred alternative, would construct a channel between Reach 2B and Reach 3, the Compact Bypass channel, in order to bypass the Mendota Pool. Restoration Flows would enter Reach 2B at the Chowchilla Bifurcation Structure, flow through Reach 2B, then downstream to Reach 3 via the Compact Bypass channel. The existing Chowchilla Bifurcation Structure would continue to divert San Joaquin River flows into the Chowchilla Bypass during flood operations, and a fish passage facility and control structure modifications would be included at the San Joaquin River control structure at the Chowchilla Bifurcation Structure. A bifurcation structure would be built at the head of the Compact Bypass channel to control diversions into Mendota Pool. Fish passage facilities would be built at the Compact Bypass bifurcation structure to provide passage around the structure. The existing San Mateo Avenue crossing would be removed. See Figure 7-3 and Figure 7-4 for a plan view of the alternative's features.

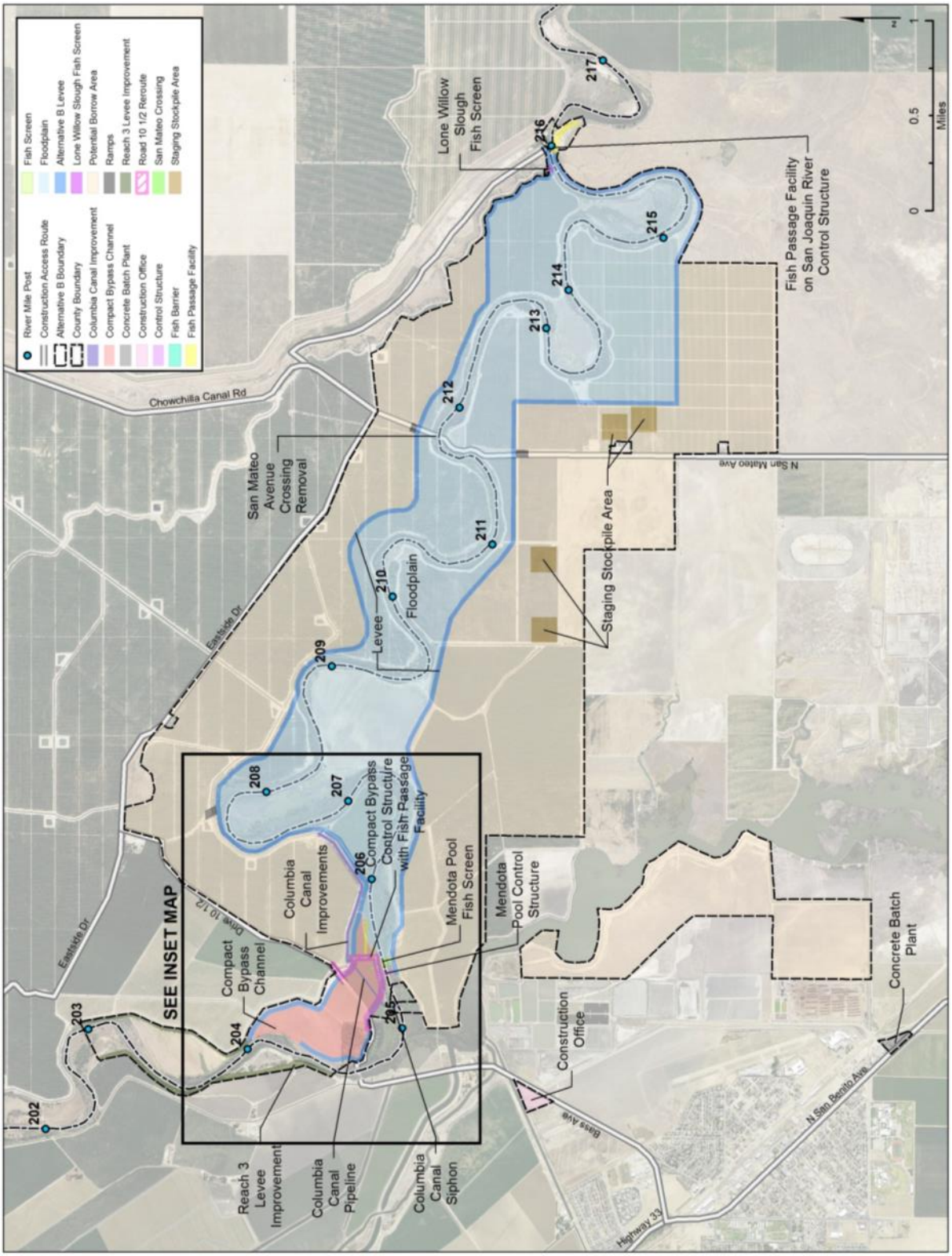

Figure 7-3.
Plan View of Alternative B
(Compact Bypass with Consensus-Based Floodplain and Bifurcation Structure)

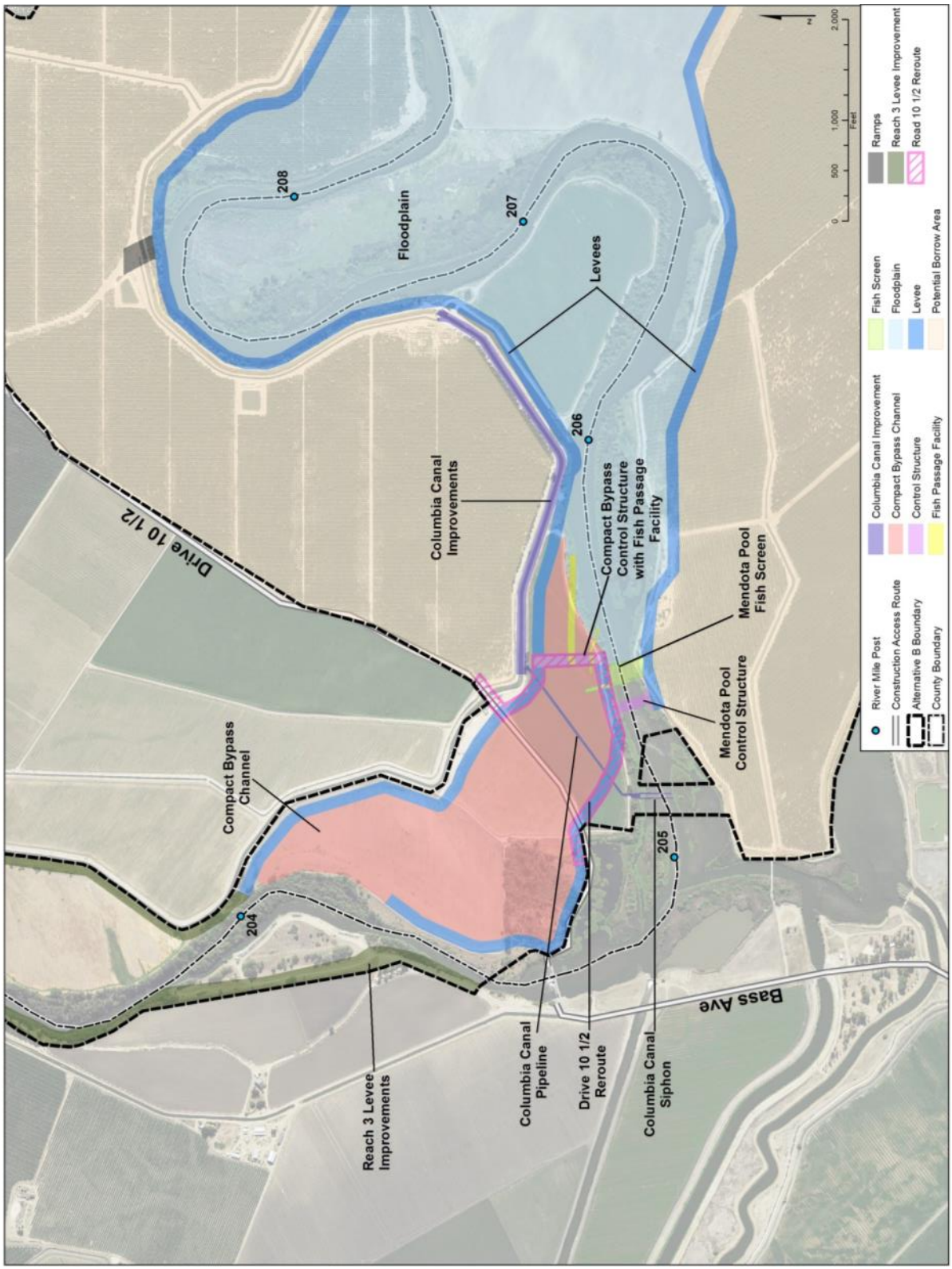

Figure 7-4.
Inset Map of Alternative B
(Compact Bypass with Consensus-Based Floodplain and Bifurcation Structure)

7.2.3 Alternative C (Fresno Slough Dam with Narrow Floodplain and Short Canal)

Alternative C (Fresno Slough Dam with Narrow Floodplain and Short Canal) would build a dam across Fresno Slough, the Fresno Slough Dam, to contain the Mendota Pool, and it would utilize the existing river channel in order to bypass the Mendota Pool. Restoration Flows would enter Reach 2B at the Chowchilla Bifurcation Structure, flow through Reach 2B, then downstream to Reach 3 over the sill at Mendota Dam. Mendota Pool would be contained south of the Fresno Slough Dam. The existing Chowchilla Bifurcation Structure would continue to divert San Joaquin River flows into the Chowchilla Bypass during flood operations, and a fish passage facility and control structure modifications would be included at the San Joaquin River control structure at the Chowchilla Bifurcation Structure. A canal to convey San Joaquin River water deliveries to Mendota Pool, the Short Canal, would be built adjacent to the Fresno Slough Dam. The Mendota Dam along with a control structure built at the head of the Short Canal would be used to control diversions into Mendota Pool through the Short Canal. Fish passage facilities at Mendota Dam and a fish screen on the Short Canal would be built to provide passage around Mendota Dam and prevent fish from being entrained in the diversion. A fish barrier would be built downstream of the Fresno Slough Dam to keep up-migrating fish in Reach 2B. A new crossing would be built at the San Mateo Avenue crossing. See Figure 7-5 and Figure 7-6 for a plan view of the alternative's features.

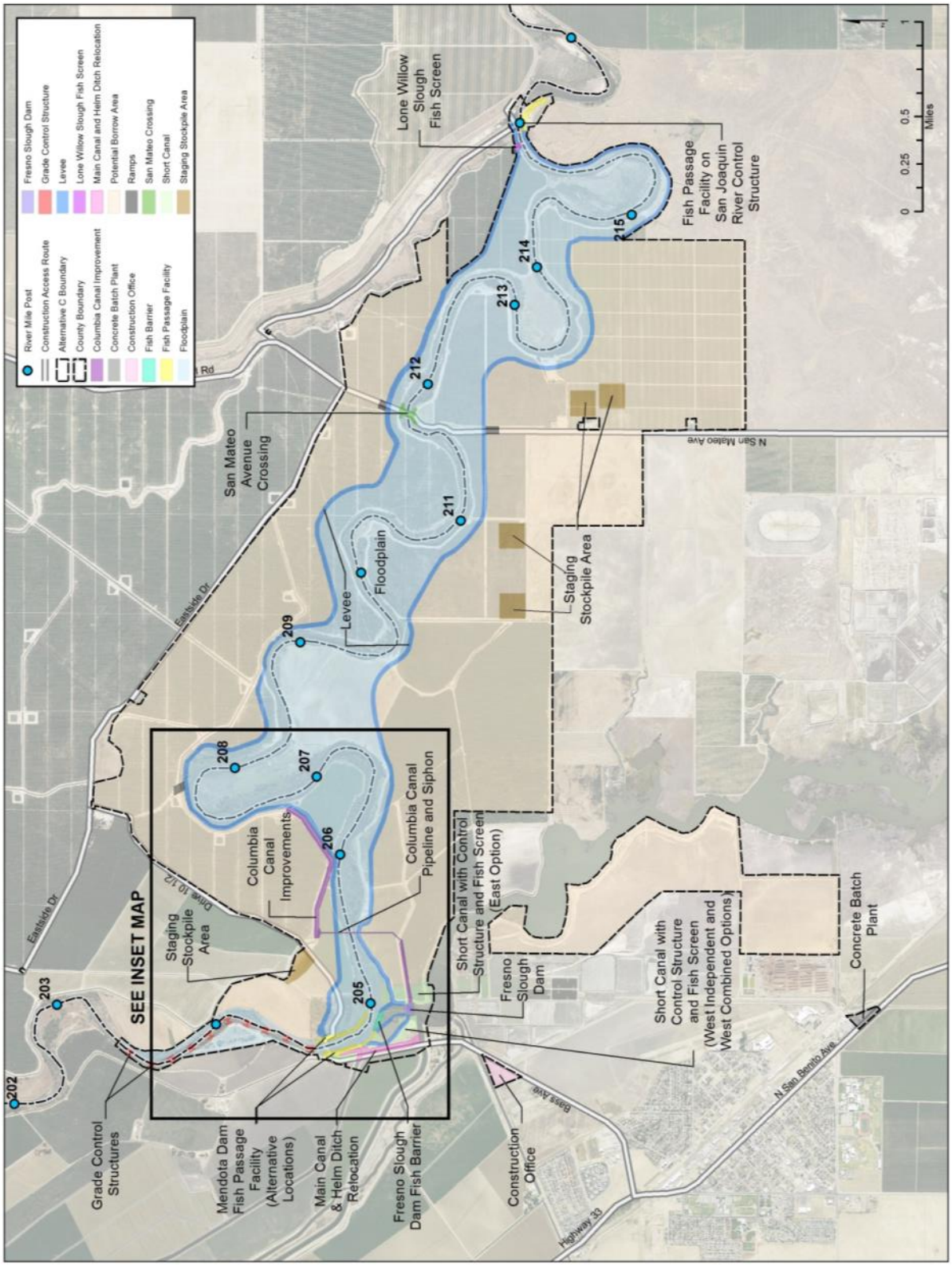

Figure 7-5.
Plan View of Alternative C
(Fresno Slough Dam with Narrow Floodplain and Short Canal)

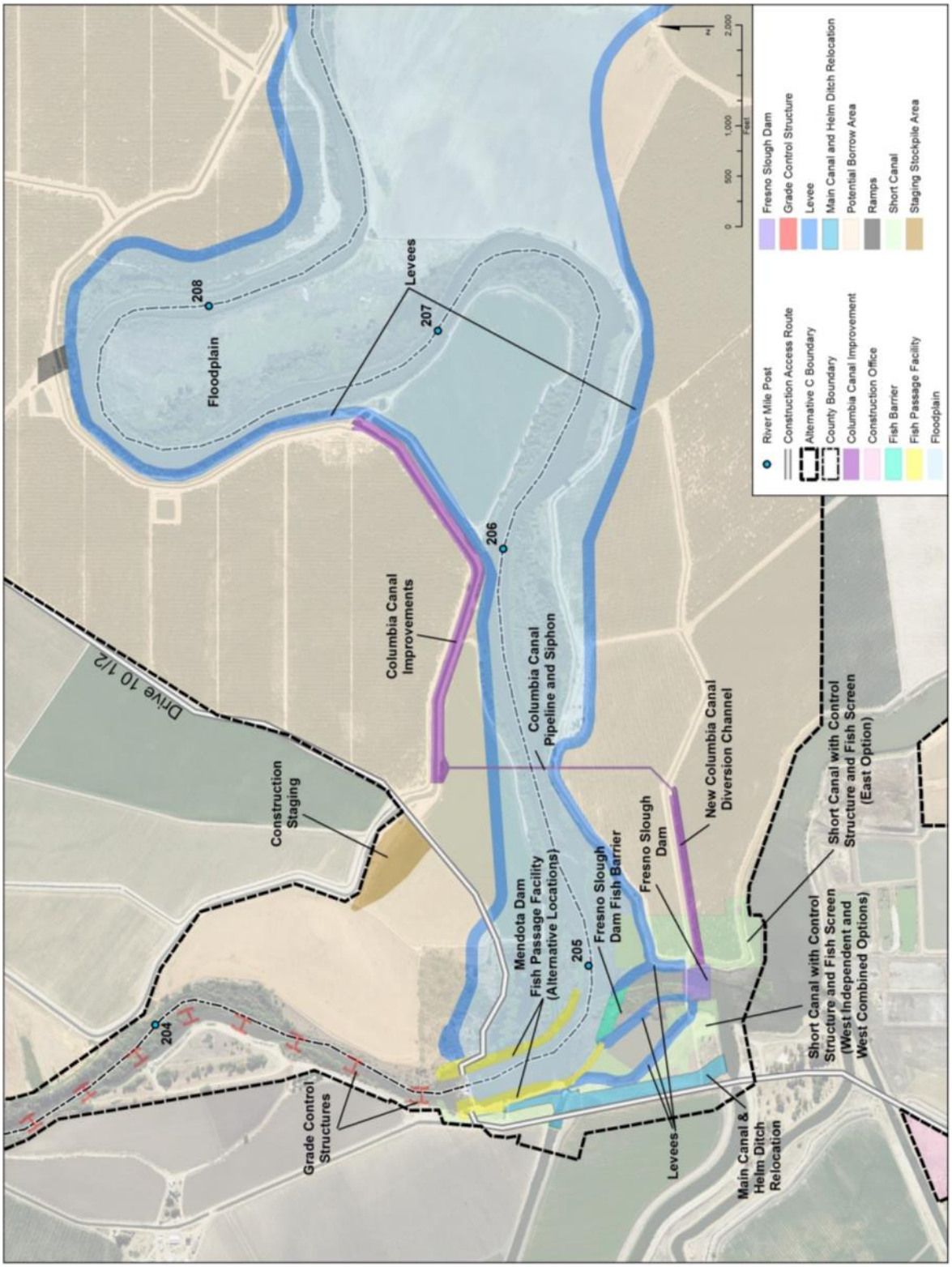

Figure 7-6.
Inset Map of Alternative C
(Fresno Slough Dam with Narrow Floodplain and Short Canal)

7.2.4 Alternative D (Fresno Slough Dam with Wide Floodplain and North Canal)

Alternative D (Fresno Slough Dam with Wide Floodplain and North Canal) would build a dam across Fresno Slough, the Fresno Slough Dam, to contain the Mendota Pool, and it would utilize the existing river channel in order to bypass the Mendota Pool. Restoration Flows would enter Reach 2B, flow through the reach, then downstream to Reach 3 over the sill at Mendota Dam. Mendota Pool would be contained south of the Fresno Slough Dam. A canal to convey San Joaquin River water deliveries to Mendota Pool, the North Canal, would be built. The San Joaquin River control structure at the Chowchilla Bifurcation Structure would be removed, and a bifurcation structure would be built at the head of the North Canal to control flood diversions into the Chowchilla Bypass and water delivery diversions into Mendota Pool. Fish passage facilities and a fish screen would be built at the North Canal bifurcation structure to provide passage around the structure and prevent fish being entrained in the diversion. A fish barrier would be built downstream of the Fresno Slough Dam to keep up-migrating fish in Reach 2B. The existing San Mateo Avenue crossing would be removed. See Figure 7-7 and Figure 7-8 for a plan view of the alternative's features.

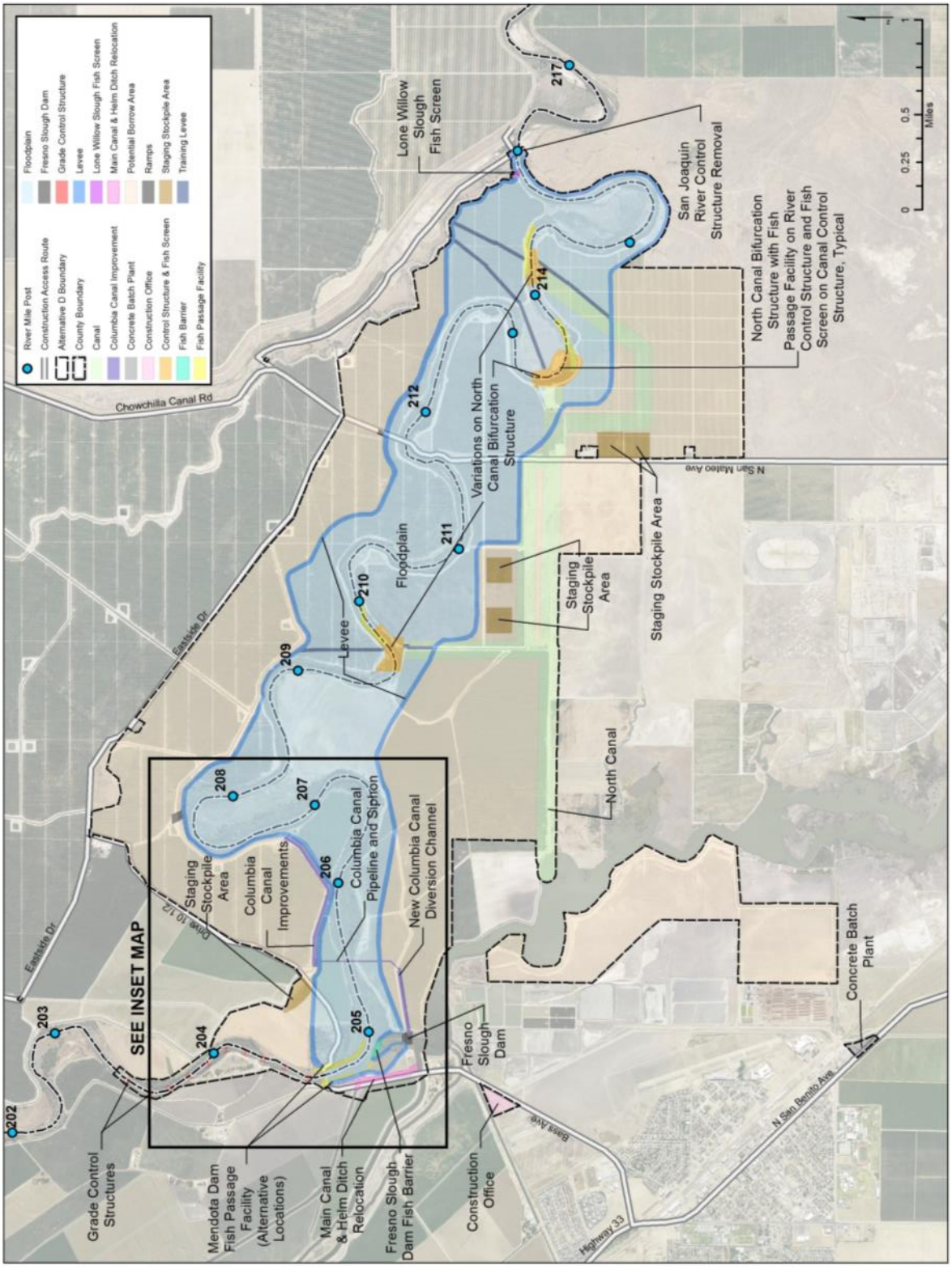

Figure 7-7.
Plan View of Alternative D
(Fresno Slough Dam with Wide Floodplain and North Canal)

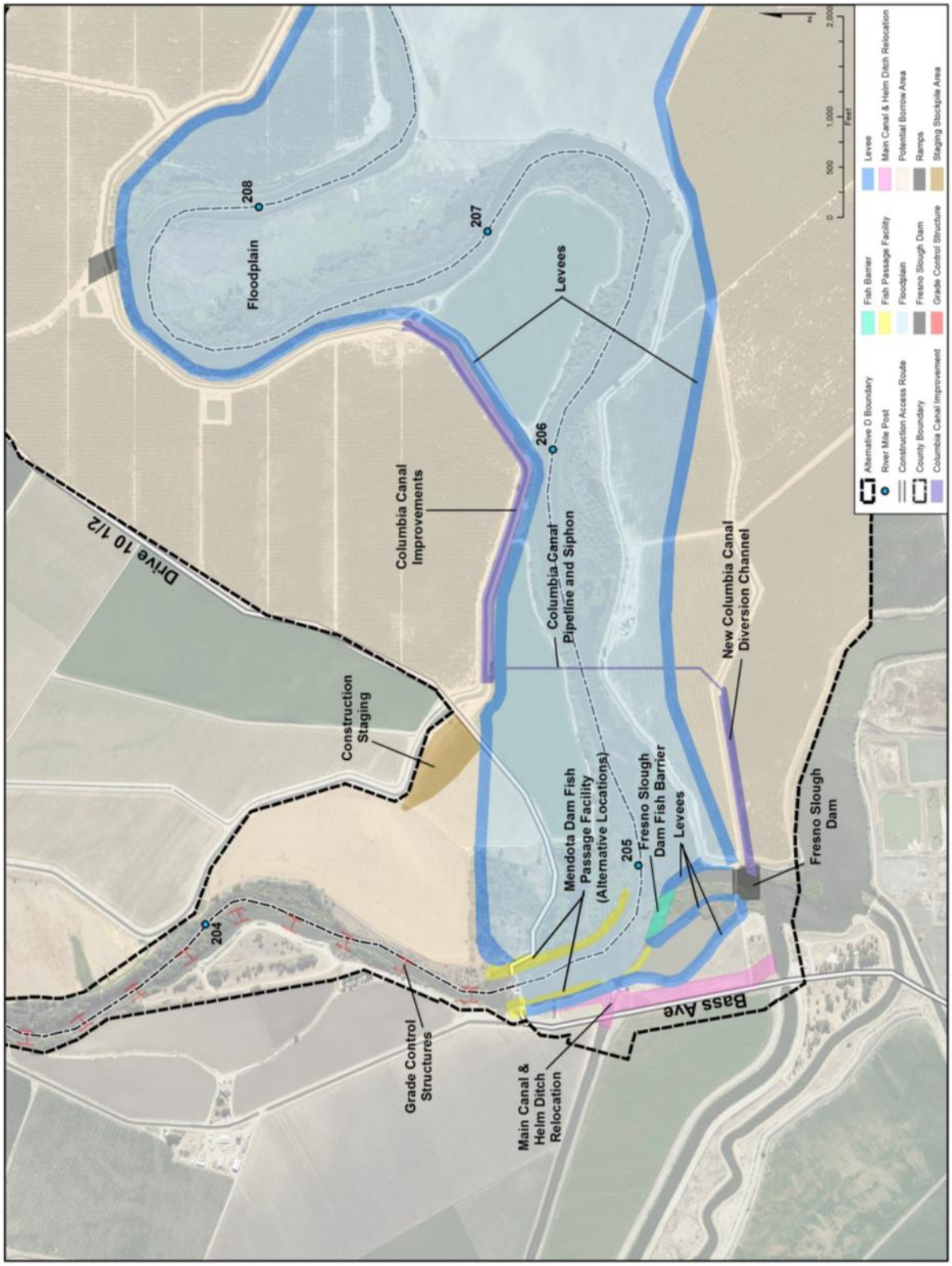

Figure 7-8.
Inset Map of Alternative D
(Fresno Slough Dam with Wide Floodplain and North Canal)

7.2.5 Alternatives Comparison Tables

The table below (Table 7-2) provides a summary of the physical characteristics of the Action Alternatives.

Table 7-2.
Levees, Relocations, and Land Acquisition

	Alternative A	Alternative B	Alternative C	Alternative D
Levees				
Left Levee Length	8.7 miles	8.1 miles	7.7 miles	7.2 miles
Left Average Levee Height	5.8 feet	5.6 feet	5.6 feet	5.2 feet
Left Fill Volume	345,200 cubic yards	328,600 cubic yards	317,500 cubic yards	272,000 cubic yards
Right Levee Length	7.1 miles	6.8 miles	6.9 miles	6.6 miles
Right Average Levee Height	5.4 feet	4.7 feet	5.2 feet	4.2 feet
Right Fill Volume	269,700 cubic yards	226,900 cubic yards	224,500 cubic yards	188,250 cubic yards
Relocations				
Electrical Distribution	43,500 feet	48,500 feet	48,000 feet	68,000 feet
Gas Transmission	10,000 feet	11,000 feet	9,000 feet	11,500 feet
Water Pipeline	31,000 feet	41,000 feet	33,000 feet	50,000 feet
Canal	32,500 feet	31,500 feet	32,500 feet	56,000 feet
Culvert	1	1	1	1
Diversion	3	3	3	3
Barn/Shed	1	1	1	1
Facility	1	1	1	1
Groundwater Well	26	32	25	32
Lift Pump	10	10	10	10
Power Pole	144	162	166	239
Dwelling	2	2	2	2
Land Acquisition and Construction Schedule				
Land Acquisition[1]	2,700 acres	2,900 acres	2,450 acres	3,300 acres
Time to Build[2]	132 months	157 months	133 months	158 months

[1] Total acreage includes areas that are sovereign and public trust lands.

[2] Construction timeline does not include the time that would also be needed to complete the NEPA and CEQA documentation process, obtain permits, appraise and acquire land, and perform pre-construction surveys.

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8.0 Evaluation of Retained Alternatives

This section provides the information used to identify the recommended LEDPA for the proposed project. The retained alternatives are evaluated in this section based on practicability, potential impacts to the aquatic ecosystem, and other potential adverse environmental consequences. The retained alternatives include Alternative A, Alternative B, Alternative C, and Alternative D.

8.1 Practicability

As defined by the 404(b)(1) Guidelines, an alternative is practicable if it is capable of being implemented after taking into consideration cost, existing technology, and logistics in light of the overall project purpose.

This section evaluates the practicability of the Project alternatives in a sequential process. It first indicates how well each of the alternatives meets the overall project purpose. It then assesses the alternatives using the three standard criteria used to determine practicability: cost, existing technology, and logistics.

8.1.1 Ability to Meet Overall Project Purpose

As described in Section 4.2, the overall project purpose includes the following elements:

- Creation of a bypass channel around Mendota Pool to ensure conveyance of at least 4,500 cfs from Reach 2B downstream to Reach 3. This improvement requires construction of a structure capable of directing flow down the bypass and allowing the Secretary to make deliveries of San Joaquin River water into Mendota Pool when necessary;
- Modifications in channel capacity (incorporating new floodplain and related riparian habitat) to ensure conveyance of at least 4,500 cfs in Reach 2B between the Chowchilla Bifurcation Structure and the new Mendota Pool bypass Channel; and
- Support of the SJRRP's Restoration Goal to restore and maintain fish populations in "good condition" in the main stem of the San Joaquin River below Friant Dam to the confluence of the Merced River, including naturally-reproducing and self-sustaining populations of salmon and other fish.

Each of the Action Alternatives (Alternative A, Alternative B, Alternative C, and Alternative D) meets all three elements of the Project purpose.

8.1.2 Cost

Analysis of Project costs includes upfront costs, which would be a one-time expenditure, and operation and maintenance (O&M) costs, reported in dollars per year. The cost of the Project alternatives varies considerably, however cost is not a primary determining factor

in eliminating alternatives for the Project. Rather, maximization of floodplain size and fish habitat, ability to meet water management needs, and use of a consensus-based process in determining the preferred alternative are the driving factors.

Upfront and O&M cost estimates for each Project alternative were calculated based on preliminary designs and are shown in Table 8-1. Upfront costs include capital improvement costs and land costs. Alternative B, the preferred alternative, is the least expensive Action Alternative ($479,980,000 upfront, $1,241,000 per year for O&M), while Alternative A is the most expensive Action Alternative ($517,330,000 upfront, $1,746,000 per year for O&M). The cost estimate for Alternative B was updated for the *Revised Framework for Implementation* and is lower than those included in Table 8-1 (SJRRP 2015b). However, because cost estimates were not updated for all Action Alternatives, the cost estimate from the *Revised Framework for Implementation* is not presented in this document.

Table 8-1.
Upfront and O&M Costs for Each Project Alternative

Alternative	Upfront Costs (dollars)	O&M Costs (dollars/year)
Alternative A	$517,330,000	$1,746,000
Alternative B, the Preferred Alternative	$479,980,000	$1,241,000
Alternative C	$490,170,000	$1,100,000
Alternative D	$505,390,000	$1,387,000

8.1.3 Existing Technology

Construction of any of the Action Alternatives would present an array of technical challenges. Although the specific suite of construction activities would vary among the alternatives, the general kinds of activities undertaken, and the level of their technical challenges, would be similar. These activities include:

- Mobilization
- Staging area construction
- Traffic control
- Grubbing and clearing
- Removal, relocation, or retrofitting of existing structures
- Site dewatering
- Transport of demolished materials
- Sediment removal and stabilization or transport
- Excavation and grading
- Concrete work

- Construction of fish passage structures and levees
- Habitat restoration

These types of construction activities are implemented for river restoration projects throughout the United States and have evolved over many decades of standard engineering practices. As a result, it is reasonable to assume that there are no obvious, major technical constraints that could not be overcome and which would render any of the Action Alternatives impracticable.

8.1.4 Logistics

Analysis of logistics includes consideration of overall Project coordination and construction issues as well as day-to-day implementation of Project activities. This section of the discussion outlines logistical issues and difficulties in constructing each of the Action Alternatives. For this project, significant logistical considerations include cultivating and maintaining stakeholder involvement, particularly from landowners, and minimizing impacts to water management operations, where possible.

Stakeholder Involvement by Landowners

Stakeholder involvement by landowners was a critical component in the development and analysis of the Action Alternatives. Without stakeholder involvement from landowners both adjacent to and within Project boundaries, it would be difficult to balance conflicting needs while acquiring the land necessary to construct the Mendota Pool Bypass, the expanded floodplain, the Mendota Pool conveyance structure, and the necessary associated infrastructure. Because of the importance of stakeholder involvement in this project, a consensus-based decision process was used to determine the best option for each component of the Project (Mendota Pool bypass, floodplain, and Mendota Pool conveyance structure). Other logistical and environmental factors were thoroughly considered, but landowner coordination and involvement in the decision-making process was vital.

Landowners prefer the Compact Bypass (Alternatives A and B) over the Fresno Slough Dam (Alternatives C and D). The wider floodplain alignments (Alternatives B and D) maximize potential fish habitat, in comparison to the narrow floodplain levee alignment (Alternatives A and C). The consensus-based floodplain (Alternative B), which was developed by creating a levee alignment based on land that could be purchased from willing sellers, is preferred by landowners over the wide floodplain levee alignment (Alternative D). The alternatives that include construction of a lengthy canal to convey water from Reach 2B to Mendota Pool (Alternatives A and D) would create access issues to farms and would require construction of bridges, while the Bifurcation Structure (Alternative B) would not create these issues. Alternative B contains the landowner preferred-options for the Mendota Pool bypass, the floodplain alignment, and the Mendota Pool conveyance structure.

Water Management Needs

An important logistical factor in the evaluation of the Action Alternatives is minimizing impacts to water management operations, where possible. Of the two Mendota Pool bypass options, the Compact Bypass would not require a substantial change in Delta-

Mendota Canal and Mendota Pool operations, while the Fresno Slough Dam would require more substantial changes to Mendota Pool operations. The Fresno Slough Dam would cause greater reductions in the volume of Mendota Pool, making the timing of inflows and outflows from the Pool more critical. Therefore, the Compact Bypass (Alternatives A and B) is preferred over the Fresno Slough Dam (Alternatives C and D) with respect to water management needs. Levee alignment would not impact water management operations. The North and South Canal Bifurcation structures would serve a similar flood flow routing function as the San Joaquin River control structure of the Chowchilla Bifurcation Structure. Therefore, to reduce the number of structures requiring fish passage, the San Joaquin River control structure of the Chowchilla Bifurcation Structure was removed from Alternatives A and D. The use of the North or South Canal Bifurcation Structure for flood flow routing to the Chowchilla Bypass would be change in flood operations. Use of the Bifurcation Structure (Alternative B) would not change flood operations. Overall, Alternative B contains the Mendota Pool bypass and Mendota Pool conveyance structure options that would best preserve water management operations.

Construction Timeline

The length of construction and overall project timeline are factors in determining a project's practicability. As with most projects, the magnitude of a particular logistical issue is related to the length of time construction is underway. Alternatives that can be completed quickly, especially when this reduces the number of work seasons, usually face fewer logistical issues than those that take longer to construct. While project timeline is considered in the evaluation of alternatives, it is not a primary determining factor. As described in Section 8.1.2, maximization of floodplain size and fish habitat, ability to meet water management needs, and use of a consensus-based process are the driving factors in identifying the preferred alternative. A summary of construction durations is included in Table 8-2.

Table 8-2.
Construction Duration for each Project Alternative

Alternative	Months to Complete
Alternative A	132
Alternative B	157
Alternative C	133
Alternative D	158

8.1.5 Conclusions Regarding Practicability

The following conclusions regarding the practicability of the Action Alternatives are based on the evaluation of each element presented above:

- Alternative A is not the most practicable alternative, but will still be carried forward in the document. Construction of the South Canal would create access issues to farms, requiring construction of bridges, and is not preferred by

landowners. The South Canal would replace the flood flow routing function of the San Joaquin River control structure of the Chowchilla Bifurcation Structure changing flood operations. Alternative A is also the most expensive alternative.

- Alternative B is the most practicable alternative. It has the fewest number of logistical challenges as it is the landowner-preferred alternative and best preserves water management operations. Alternative B is also the least expensive alternative.
- Alternative C is not the most practicable alternative, but will still be carried forward in the document. Several components of Alternative C were considered undesirable by landowners and they require significant alterations to water management and flood operations.
- Alternative D is not the most practicable alternative, but will still be carried forward in the document. None of the components of Alternative D are preferred by landowners and they require significant alterations to water management and flood operations.

8.2 Potential Impacts to the Aquatic Ecosystem

This section describes the impacts to the aquatic ecosystem associated with each Action Alternative. With respect to wetlands and other waters of the United States, the primary environmental impact issue and concern is the following:

Impact WET-1: Fill, Fragment, Isolate, Divert, or Substantially Alter Potentially Jurisdictional Wetlands and Other Waters during Construction.

Impact WET-2: Fill, Fragment, Isolate, Divert, or Substantially Alter Potentially Jurisdictional Wetlands or Other Waters during the Operations and Maintenance Phase.

Impact WET-3: Conflict with Provisions of Local or Regional Plans Regarding Conservation Lands.

8.2.1 Alternative A (Compact Bypass with Narrow Floodplain and South Canal)

Alternative A would include construction of Project facilities including a Compact Bypass channel, a new levee system encompassing the existing river channel in a narrow floodplain, and the South Canal. Other key features include construction of the Mendota Pool Dike (separating the San Joaquin River and Mendota Pool), a fish barrier below Mendota Dam, and the South Canal bifurcation structure and fish passage facility, modification of the San Mateo Avenue crossing, and the removal of the San Joaquin River control structure at the Chowchilla Bifurcation Structure. Construction activity is expected to occur intermittently over an approximate 132-month timeframe.

This alternative includes passive riparian habitat restoration and grazing or farming in the floodplain. It is assumed that over time wetland communities would develop within the main channel and that a dense riparian scrubland would develop along the main river

channel banks. The Restoration Flows would be used to recruit new vegetation along the channel from the existing seed bank. Between the main river channel banks and the proposed levees, limited agricultural practices (e.g., annual crops, pasture, or floodplain-compatible permanent crops) would occur.

Impact WET-1 (Alternative A): ***Fill, Fragment, Isolate, Divert, or Substantially Alter Potentially Jurisdictional Wetlands and Other Waters during Construction.*** Construction activities have the potential to result, indirectly or directly, in adverse effects on jurisdictional waters of the United States and waters of the State, including wetlands. Compared to the No-Action Alternative, implementing Alternative A would result in channel modifications in Reach 2B to divert the river into the Compact Bypass channel for fish passage. This and other actions may involve dredging, grading, and recontouring within the OHWM of waters of the United States. As a result, dredged or fill materials would be discharged into waters of the United States, and permanent fill of Corps jurisdictional wetlands could occur.

Project actions to manage channel habitat may also result in temporary or permanent fill of waters of the United States, including wetlands. Channel habitat enhancement could involve dredging, grading, and recontouring to connect the existing channel to the Compact Bypass, which would result in discharge of fill material. In addition, some adjacent wetlands could be permanently filled or isolated by constructing control structures within the channel. These actions could result in loss of not only the filled wetlands, but any associated adjacent wetland habitat.

Construction of haul roads, staging areas, new levees, and other potential ancillary facilities could result in temporary or permanent fill of waters of the United States, including wetlands. Constructing and installing fish passage facilities, fish barriers, and new control structures, as well as modifying existing control structures and road crossings, and other Project actions, could also result in placement of fill into waters of the United States.

Although many of the Project actions could result in discharge of dredged or fill material into waters of the United States, including wetlands, most of these activities would not result in permanent loss of acreage, functions, or values of wetland habitats. New low-flow channel, side-channel, bypass channel, and floodplain habitat would be created and these and other modified areas of river reaches and bypasses would continue to convey water and support aquatic habitat.

Table 8-3 summarizes the impact acreage for Alternative A for each category of potentially jurisdictional wetlands and other waters in the Project area. These acreages represent the worst-case scenario where all existing floodplain areas are assumed to be impacted. Areas temporarily disturbed during construction would be restored to previous contours, if feasible, and then seeded with a native vegetation seed mixture to prevent soil erosion.

Table 8-3.
Wetlands and Waters of the United States Potentially Affected by Alternative A

Type	Maximum Impacted Area (acres)	
	Permanent	Temporary
Riparian Wetlands	102.1	23.2
Wet Meadows	55.4	<0.02
Marshes	47.5	0.9
Non-Wetland Waters of the United States	412.0	31.9
Total Riparian, Wetlands, and Other Waters	**617.1**	**56.0**

The Project alternatives (including Alternative A) include specific conservation measures to avoid, minimize, or compensate for adverse effects on waters of the United States and waters of the State, including wetlands (as outlined in Section 5.3.18, Table 5-1 and described in Appendix A), and these measures would be implemented as part of the Project alternative. Temporary impacts of the Project alternative would be minimized by implementation of conservation measures that require coordination with the Corps, identification and quantification of wetlands and waters of the United States/waters of the State, obtaining permits, and full compensation for any loss of wetlands and other waters of the United States/waters of the State. Implementing Conservation Measures WUS-1 and WUS-2 would ensure that loss and degradation of waters of the United States, and other wetland habitats, would be avoided and minimized during construction activities, to the extent feasible. Implementing Conservation Measures WUS-1 and WUS-2 would ensure that any wetland habitat or other waters of the United States that could not feasibly be avoided would be replaced, restored, or enhanced so that the Project would result in no net loss of aquatic acreage, functions, and values. Because conservation measures will be implemented as part of the Project, Alternative A would not have substantial effects on jurisdictional wetlands by construction of facilities or during other construction-related Project actions (e.g., habitat restoration).

When comparing Alternative A to existing conditions, impacts would be similar to those described in the preceding paragraphs (i.e., the comparison of Alternative A to No-Action Alternative). Impacts would be **less than significant**.

Impact WET-2 (Alternative A): ***Fill, Fragment, Isolate, Divert, or Substantially Alter Potentially Jurisdictional Wetlands and Other Waters during the Operations and Maintenance Phase.*** Compared to the No-Action Alternative, Alternative A would result in expanding the river's floodplain and increasing the flow conveyance capacity of the reach. These changes, in combination with Restoration Flows, have the potential to result in both adverse and beneficial effects on jurisdictional waters of the United States and waters of the State, including wetlands. The increase in flows could permanently inundate and thus eliminate some wetlands, but also expand or create additional areas of wetlands. Additionally, the reduction in normal water elevation in certain portions of Reach 2B

caused by removal of the influence of Mendota Pool would drain and dewater some wetlands during some portions of the year, but would also expand or create additional areas of wetlands. After Project completion, in most instances, affected waters of the United States would be expected to have improved habitat functions as compared to No-Action conditions for several reasons: (1) fish habitat would be enhanced, (2) floodplain habitat would be expanded and enhanced, and (3) riparian habitat would be enhanced.

Long-term passive riparian habitat restoration of the San Joaquin River would improve native floodplain and in-channel habitats. Perennial base flows and seasonal high flows in the river would promote the establishment of riparian vegetation, wet meadows, and marshes and increase overall floodplain connectivity. Alternative A would restore river-floodplain connectivity and longitudinal connectivity of riparian vegetation near the channel and enhance landscape connectivity between the river corridor and adjacent sloughs or tributary channels.

When comparing Alternative A to existing conditions, effects would be similar to those described in the preceding paragraphs (i.e., the comparison of Alternative A to the No-Action Alternative). According to habitat restoration estimates, Alternative A could support up to 720 acres of wetlands and other waters within hydric soils in of the floodplain and bypass area. This is a 10 percent increase in acreage as compared to existing conditions. Wetland plant species can also become established in other areas of the floodplain, however without hydric soils these other areas would not qualify as jurisdictional wetlands.[5] Alternative A is expected to result in long-term **beneficial** effects to wetlands and other waters.

Impact WET-3 (Alternative A): ***Conflict with Provisions of Local or Regional Plans Regarding Conservation Lands.*** Compared to the No-Action Alternative, Alternative A would not conflict with the provisions of the Fresno and Madera counties' general plans regarding conservation lands. The Project would not result in long-term net loss of acreage, functions, or values of wetland habitats or riparian areas, interfere with the management of conserved lands, or eliminate opportunities for conservation actions. The Project is expected to result in a long-term increase in wetland and riparian habitats. These consequences of implementing the Project would benefit general plans that strive to conserve, restore, and enhance these habitats. The Project would enhance opportunities to implement conservation strategies and attain conservation goals by providing hydrologic conditions and floodplain areas necessary to restore wetlands.

When comparing Alternative A to existing conditions, impacts would be similar to those described in the preceding paragraph (i.e., the comparison of Alternative A to the No-Action Alternative) and would result in supporting county general plans. This is a **beneficial** effect.

[5] Growth of hydrophytic plants in areas without hydric soils is generally rare and usually only happens in transition zones between wetlands and uplands, transitional zones at and below the OHWM, and where fill has occurred recently.

8.2.2 Alternative B (Compact Bypass with Consensus-Based Floodplain and Bifurcation Structure), the Preferred Alternative

Alternative B would include construction of Project features including a Compact Bypass channel, a new levee system with a wide, consensus-based floodplain encompassing the river channel, and the Compact Bypass Bifurcation Structure with fish passage facility. Other key features include construction of a fish passage facility at the San Joaquin River control structure at the Chowchilla Bifurcation Structure, the re-route of Drive 10 ½ (across the Compact Bypass control structure), and removal of San Mateo Avenue crossing. Construction activity is expected to occur intermittently over an approximate 157-month timeframe.

This alternative includes a mixture of active and passive riparian and floodplain habitat restoration and compatible agricultural activities in the floodplain. Active restoration planting would occur along the low flow channel of the river and in riparian establishment areas to establish a riparian area and seed bank, and floodplain areas would be seeded with native plants. Natural riparian recruitment (passive restoration) would promote continual habitat succession, particularly in areas where sediment is deposited or vegetation is removed by natural processes. Plantings that are wetland species or borderline wetland species would be irrigated as necessary during the establishment period of 3 to 5 years. Maintenance, monitoring, and long-term management would be conducted following revegetation.

Impact WET-1 (Alternative B): ***Fill, Fragment, Isolate, Divert, or Substantially Alter Potentially Jurisdictional Wetlands and Other Waters during Construction.*** Refer to Impact WET-1 (Alternative A). Potential impacts of Alternative B would be similar to potential impacts of Alternative A, with the following exceptions. Construction of the Project under Alternative B would affect the acreages of wetlands and other waters shown in Table 8-4. Alternative B has less potentially impacted area compared to Alternative A. As described under Impact WET-1 (Alternative A), avoidance, minimization, and compensation for loss of wetlands and other waters would reduce adverse effects during construction. Impacts of Alternative B would be **less than significant**.

Table 8-4.
Wetlands and Waters of the United States Potentially Affected by Alternative B

Type	Maximum Impacted Area (acres)	
	Permanent	Temporary
Riparian Wetlands	106.9	3.9
Wet Meadows	51.3	-
Marshes	50.6	0.9
Non-Wetland Waters of the United States	366.3	13.3
Total Riparian, Wetlands, and Other Waters	**575.1**	**18.1**

Impact WET-2 (Alternative B): ***Fill, Fragment, Isolate, Divert, or Substantially Alter Potentially Jurisdictional Wetlands and Other Waters during the Operations and Maintenance Phase.*** Refer to Impact WET-2 (Alternative A). Potential impacts for Alternative B are similar to potential impacts of Alternative A, with the following exceptions. According to habitat restoration estimates, Alternative B could support up to 840 acres of wetlands and other waters within hydric soils in of the floodplain and bypass area. This is more than a 40 percent increase in acreage compared to existing conditions. Wetland plant species could also become established in other areas of the floodplain, however without hydric soils these other areas would not become jurisdictional wetlands. Alternative B also includes natural channel erosion in Reach 2B (in the approximate 4 miles upstream of the Compact Bypass) and some sediment deposition in Reach 3 (in the approximate 1 mile downstream of the Compact Bypass) in order to re-establish stable sediment transport. Downcutting and sedimentation may affect existing wetland vegetation adjacent to the river channel, but new wetland vegetation would be expected to establish in these areas. Alternative B is expected to have long-term **beneficial** effects to wetlands and other waters.

Impact WET-3 (Alternative B): ***Conflict with Provisions of Local or Regional Plans Regarding Conservation Lands.*** Refer to Impact WET-3 (Alternative A). Potential impacts for Alternative B would be the same as potential impacts of Alternative A. This would be a **beneficial** effect.

8.2.3 Alternative C (Fresno Slough Dam with Narrow Floodplain and Short Canal)

Alternative C would include construction of Project features including Fresno Slough Dam, a new levee system with a narrow floodplain encompassing the river channel, and the Short Canal. Other key features include construction of the Mendota Dam fish passage facility, the Fresno Slough fish barrier, the Short Canal control structure and fish screen, the Chowchilla Bifurcation Structure fish passage facility, modification of San Mateo Avenue crossing, and Main Canal and Helm Ditch relocations. Construction activity is expected to occur intermittently over an approximate 133-month timeframe.

Similar to Alternative B, Alternative C includes active riparian and floodplain habitat restoration. It is assumed that wetland communities would develop within the main channel, that a dense riparian scrubland would develop along the main river channel banks, and that bands of other habitat types (wetland, scrub, grassland, and forest) would develop at higher elevations along the channel corridor. The wetland, floodplain, and riparian areas would be planted following construction and then irrigated, monitored, maintained, and managed as necessary during the establishment period.

Impact WET-1 (Alternative C): ***Fill, Fragment, Isolate, Divert, or Substantially Alter Potentially Jurisdictional Wetlands and Other Waters during Construction.*** Refer to Impact WET-1 (Alternative A). Potential impacts of Alternative C would be similar to potential impacts of Alternative A. Construction of the Project would affect the acreages wetlands and other waters shown in Table 8-5. As described under Impact WET-1 (Alternative A), avoidance, minimization, and compensation for loss of wetlands and

other waters would reduce adverse effects during construction. Impacts of Alternative C would be **less than significant**.

Table 8-5.
Wetlands and Waters of the United States Potentially Affected by Alternative C

Type	Maximum Impacted Area (acres)	
	Permanent	Temporary
Riparian Wetlands	137.6	18.6
Wet Meadows	52.2	<0.02
Marshes	57.5	7.2
Non-Wetland Waters of the United States	441.2	64
Total Riparian, Wetlands, and Other Waters	**688.5**	**89.8**

Impact WET-2 (Alternative C): ***Fill, Fragment, Isolate, Divert, or Substantially Alter Potentially Jurisdictional Wetlands and Other Waters during the Operations and Maintenance Phase.*** Refer to Impact WET-2 (Alternative A). Potential impacts for Alternative C are similar to potential impacts of Alternative A with the following exceptions. Alternative C includes active riparian and floodplain habitat restoration. Wetland, floodplain, and riparian areas would be planted following construction and then irrigated and managed as necessary during the establishment period. According to habitat restoration estimates, Alternative C could support up to 760 acres of wetlands and other waters within hydric soils in of the floodplain and Fresno Slough Dam area. This would be a slight increase in acreage compared to existing conditions. Wetland plant species can also become established in other areas of the floodplain, however without hydric soils these other areas would not qualify as jurisdictional wetlands. Alternative C is expected to have long-term **beneficial** effects to wetlands and other waters.

Impact WET-3 (Alternative C): ***Conflict with Provisions of Local or Regional Plans Regarding Conservation Lands.*** Refer to Impact WET-3 (Alternative A). Potential impacts for Alternative C would be the same as potential impacts of Alternative A. This would be a **beneficial** effect.

8.2.4 Alternative D (Fresno Slough Dam with Wide Floodplain and North Canal)

Alternative D would include construction of Project features including Fresno Slough Dam, a new levee system with a wide floodplain encompassing the river channel, and the North Canal. Other key features include construction of the Mendota Dam fish passage facility, the Fresno Slough fish barrier, the North Canal bifurcation structure and North Canal fish passage facility, removal of the San Joaquin River control structure at the Chowchilla Bifurcation Structure, removal of San Mateo Avenue crossing, and Main Canal and Helm Ditch relocations. Construction activity is expected to occur intermittently over an approximate 158-month timeframe.

Similar to Alternative A, Alternative D includes passive riparian habitat restoration and farming in the floodplain. It is assumed that over time wetland communities would develop within the main channel and that a dense riparian scrubland would develop along the main river channel banks. The Restoration Flows would be used to recruit new vegetation along the channel from the existing seed bank. Between the main river channel banks and the proposed levees, limited agricultural practices (e.g., annual crops, pasture, or floodplain-compatible permanent crops) would occur.

Impact WET-1 (Alternative D): *Fill, Fragment, Isolate, Divert, or Substantially Alter Potentially Jurisdictional Wetlands and Other Waters during Construction.* Refer to Impact WET-1 (Alternative A). Potential impacts of Alternative D are similar to potential impacts of Alternative A, with the following exception. Construction of the Project would affect the acreages of wetlands and other waters shown in Table 8-6. As described under Impact WET-1 (Alternative A), avoidance, minimization, and compensation for loss of wetlands and waters would reduce the potential for adverse effects during construction. Impacts of Alternative D would be **less than significant**.

Table 8-6.
Wetlands and Waters of the United States Potentially Affected by Alternative D

Type	Maximum Impacted Area (acres)	
	Permanent	Temporary
Riparian Wetlands	137.1	15.9
Wet Meadows	52.2	<0.02
Marshes	56.0	8.1
Non-Wetland Waters of the United States	447.7	58.2
Total Riparian, Wetlands, and Other Waters	**693.1**	**82.2**

Impact WET-2 (Alternative D): *Fill, Fragment, Isolate, Divert, or Substantially Alter Potentially Jurisdictional Wetlands and Other Waters during the Operations and Maintenance Phase.* Refer to Impact WET-2 (Alternative A). Potential impacts for Alternative D are similar to potential impacts of Alternative A. Alternative D includes passive riparian habitat restoration and farming in the floodplain. Restoration Flows would be used to recruit new vegetation along the channel from the existing seed bank. Between the main river channel banks and the proposed levees, agricultural practices (e.g., annual crops, pasture, or floodplain-compatible permanent crops) would occur. According to habitat restoration estimates, Alternative D could support up to 880 acres of wetlands and other waters within hydric soils in of the floodplain and Fresno Slough Dam area. This is more than a 15 percent increase in acreage compared to existing conditions. Wetland plant species can also become established in other areas of the floodplain, however without hydric soils these other areas would not qualify as jurisdictional wetlands. Alternative D is expected to result in long-term **beneficial** effects to wetlands and other waters.

Impact WET-3 (Alternative D): Conflict with Provisions of Local or Regional Plans Regarding Conservation Lands. Refer to Impact WET-3 (Alternative A). Potential impacts for Alternative D would be the same as potential impacts of Alternative A. This would be a beneficial effect.

8.3 Other Potential Adverse Environmental Consequences

The Guidelines specify that an alternative may be designated the LEDPA only if it "does not have other significant adverse environmental consequences." This section presents information on environmental issues for which the EIS/R indicates there would be a significant, unavoidable project impact after mitigation. These issues include Air Quality, Land Use Planning and Agricultural Resources, and Transportation and Traffic. As shown in Table 8-7, implementing the Project would have several significant and unavoidable environmental impacts. Where feasible mitigation exists, it has been included to reduce these impacts; however, the mitigation would not be sufficient to reduce these impacts to a less-than-significant level.

Table 8-7.
Summary of Significant and Unavoidable Impacts

Impacts	Alternative	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
Air Quality				
AQ-3: Expose Sensitive Receptors to Substantial Air Pollutants Associated with Construction	A	S	AQ-3A: Reduce Diesel Particulate Matter Emissions from Construction Equipment AQ-3B: Reduce Diesel Particulate Matter Emissions from Material Hauling Vehicles	SU
	B	S		SU
	C	S		SU
	D	S		SU
Land Use Planning and Agricultural Resources				
LU-1: Removal of Land from Agricultural Production	A	S	LU-1: Preserve Agricultural Productivity od Designated Farmland to the Extent Possible	SU
	B	S		SU
	C	S		SU
	D	S		SU
LU-2: Conversion of Designated Farmland to Non-Agricultural Uses	A	S	LU-2: Preserve Agricultural Productivity od Designated Farmland to the Extent Possible	SU
	B	S		SU
	C	S		SU
	D	S		SU
LU-3: Conflict with Williamson Act Contracts	A	S	LU-3: Preserve Agricultural Productivity od Designated Farmland to the Extent Possible	SU
	B	S		SU
	C	S		SU
	D	S		SU

Table 8-7.
Summary of Significant and Unavoidable Impacts

Impacts	Alternative	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
Transportation and Traffic				
TRA-4. Potential to Result in Inadequate Emergency Access	A	PS	TRA-4A: Provide Temporary Roadway and Crossing at San Mateo Avenue	SU
	B	PS	TRA-4B: Use Construction Sequencing to Provide Continuous Emergency Access at Drive 10 ½	SU
	C	PS	TRA-4A: Provide Temporary Roadway and Crossing at San Mateo Avenue	SU
	D	PSU	--	PSU

Key:
LTS = less than significant
PS = potentially significant
PSU = potentially significant and unavoidable
S = significant
SU = significant and unavoidable

8.3.1 Construction-Related Air Pollutants

Diesel fueled equipment emits the toxic air contaminant diesel particulate matter. Project construction emissions were estimated for off-road construction equipment and material hauling vehicles which are diesel fueled, and an exposure assessment and health risk assessment was conducted for sensitive receptors in the Project area. Sensitive receptors were found to have a significant increase in cancer risk for both a resident child and school child exposure scenarios. Mitigation measures would be implemented to reduce diesel particulate matter emissions from construction equipment and material hauling vehicles. All off-road construction diesel equipment and material-hauling diesel equipment would use the cleanest reasonably available equipment or consider alternative fueled equipment or addition of after-market control devices (e.g., diesel particulate filters). Material hauling trips would also be consolidated into the fewest trips possible. If these mitigation measures reduce emissions by 85 percent, which is the maximum estimated reduction when diesel particulate filters are used by all equipment and trucks, the excess cancer risk for the resident child would still be above target values. This is due to the size of the construction Project and the close proximity of the receptor to the roadway.

8.3.2 Agricultural Resources

Project actions would remove substantial amount of agricultural lands from production, including Prime Farmland, Farmland of Statewide Importance, and Unique Farmland, and potentially conflict with Williamson Act contracts. Mitigation measures would require the Project proponents to recognize and minimize adverse effects on agricultural lands to the extent practicable. Measures include selection of borrow areas to minimize

fragmentation of agricultural lands; locating construction laydown and staging areas on sites that are fallow, disturbed, or to be discontinued for use as agricultural land to the extent possible, and using existing roads to access construction areas to the extent possible; stockpiling of topsoil in designated farmland areas to be used in subsequent habitat restoration, restoration of agricultural uses, or redistributed for agricultural purposes; coordinate with landowners and agricultural operators to minimize construction-related impairment of agricultural productivity; and providing access to potential agricultural areas on the floodplain. The Project proponent would also acquire agricultural conservation easements to be held by land trusts or public agencies or provide funds to a land trust or government program that conserves agricultural lands. However, implementation of these measures would not avoid the conversion of agricultural land to non-agricultural uses or fully mitigate the loss of farmland and the residual effect is significant and unavoidable.

8.3.3 Emergency Response Times

Project construction activities would create temporary or permanent roadway closures that may affect emergency access/emergency response times to areas immediately north of the San Mateo Avenue crossing or near Drive 10 ½. For those alternatives that improve the San Mateo Avenue crossing, mitigation measures would require a temporary roadway and crossing to allow for thru-traffic and access across levee, canal, and river crossing construction areas, as applicable. The mitigation measure for Alternative B requires construction sequencing to provide continuous emergency access at Drive 10 ½. In both cases, local emergency dispatchers will be notified of temporary road closures. No feasible mitigation exists for long-term impacts to emergency response times near areas with permanent roadway closures.

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9.0 Summary and Conclusions

This document provides information to identify the recommended LEDPA for the Project. It presents the substantive requirements of the CWA Section 404(b)(1) Guidelines, describes the Project and its basic and overall project purposes, describes the potential waters of the United States in the Project area, and traces the evolution of Project alternatives. It evaluates the four Action Alternatives: Alternative A (Compact Bypass with narrow Floodplain and South Canal), Alternative B (Compact Bypass with Consensus-Based Floodplain and Bifurcation Structure, the preferred alternative), Alternative C (Fresno Slough Dam with Narrow Floodplain and Short Canal), and Alternative D (Fresno Slough Dam with Wide Floodplain and North Canal). For each of these alternatives, this document: 1) assesses the extent to which it meets the overall project purpose; (2) evaluates practicability using the factors of cost, available technology, and logistics; (3) describes potential impacts to waters of the United States; and (4) identifies other potential adverse environmental consequences. Table 9-1 summarizes some of the key information used in the evaluation.

This document finds that the No Action Alternative does not meet the Project purpose and it was eliminated from further discussion. The four Action Alternatives meet all three elements of the project purpose and are evaluated further for their practicability, including logistics, costs, technology and other environmental consequences.

Alternative A, C, and D are not the most practicable alternatives as they contain significant logistical hurdles. Both Alternative C and D include the Fresno Slough Dam, which landowners did not prefer in comparison with the Compact Bypass. The Fresno Slough Dam would also require alterations to Mendota Pool operations and would reduce the volume of the Mendota Pool. The canal options in Alternatives A and D would create access issues to farms, require construction of bridges, and would require changes in flood management, as the control structure for the Chowchilla Bypass would be moved downstream. Alternative A has a narrow floodplain alignment which provides the smallest floodplain acreage for potential fish habitat.

Alternative D has the greatest permanent impact on waters of the United States (693.1 acres), followed by Alternative C (688.5 acres), Alternative A (617.1 acres), and Alternative B (575.1 acres). Alternative C has the greatest temporary impact on waters of the United States (89.8 acres), followed by Alternative D (82.2 acres), Alternative A (56.0 acres), and Alternative B (18.1 acres). All of the Action Alternatives will have similar potential adverse environmental consequences on air quality, agricultural resources, and emergency response times.

Alternative B meets the overall project purpose. It is the most practicable alternative because it has fewer logistic hurdles. Alternative B has the smallest impact on waters of the United States and has similar potential adverse environmental consequences as compared to the other Action Alternatives. Based on the information presented in this document, Alternative B is the recommended LEDPA.

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Table 9-1.
Key Factors for LEDPA Recommendation

	# Project Purpose Elements Met	Upfront Costs (dollars)	O&M Costs (dollars/year)	Landowner Preferred	Meets Water Management Needs	Months to Build	Impacts to Wetlands and Other Waters (acres)	
							Permanent	Temporary
Alternative A (Compact Bypass with Narrow Floodplain and South Canal)	3	$517,330,000	$ 1,746,000	Moderate Approval	Yes/No	132	617.1	56.0
Alternative B (Compact Bypass with Consensus-Based Floodplain and Bifurcation Structure), the Preferred Alternative	3	$479,980,000	$ 1,241,000	Yes	Yes	157	575.1	18.1
Alternative C (Fresno Slough Dam with Narrow Floodplain and Short Canal)	3	$490,170,000	$ 1,100,000	No	No	133	688.5	89.8
Alternative D (Fresno Slough Dam with Wide Floodplain and North Canal)	3	$505,390,000	$ 1,387,000	No	No	158	693.1	82.2

10.0 References

Ahlborn, G. 1999. Fresno Kangaroo Rat (*Dipodomys nitratoides*). California Wildlife Habitat Relationships System, California Department of Fish and Wildlife, California Interagency Wildlife Task Group. September.

Ahlborn, G. 2000. Kit Fox (*Vulpes macrotis*). California Wildlife Habitat Relationships System, California Department of Fish and Wildlife, California Interagency Wildlife Task Group. May.

California Burrowing Owl Consortium. 1993. *Burrowing Owl Survey Protocol and Mitigation Guidelines*. April.

California Department of Fish and Wildlife (DFW). 2009. *List of California Vegetation Alliances*. Vegetation Classification and Mapping Program. Department of Fish and Game, Biogeographic Data Branch. December 28.

California Department of Fish and Wildlife (DFW). 2012. *Staff Report on Burrowing Owl Mitigation*. March 7.

Grosholz, E. and E. Gallo. 2006. *The influence of flood cycle and fish predation on invertebrate production on a restored California floodplain*. Hydrobiologia 568: 91-109.

Hickson, pers. comm. 2009. Telephone conversation between Diana Hickson, Senior Vegetation Ecologist, DFW, and George Strnad, Project Plant Ecologist, URS. December 10.

Houk, pers. comm. 2009. Personal communication with Randy Houk during the Reach 2B team site visit. December 15.

Jeffres, C.A., J.J. Opperman, and P.B. Moyle. 2008. Ephemeral floodplain habitats provide best growth conditions for juvenile Chinook salmon in a California River. *Environmental Biology of Fishes*. Vol. 83, No. 4. Pages 449-458.

San Joaquin River Restoration Program (SJRRP). 2010. *Fisheries Management Plan: A Framework for Adaptive Management in the San Joaquin River Restoration Program*. November.

San Joaquin River Restoration Program (SJRRP). 2011a. *Draft San Joaquin River Restoration Program, Program Environmental Impact Statement/Report*. April. SCH # 2007081125.

San Joaquin River Restoration Program (SJRRP). 2011b. *Technical Memorandum on Regulatory Compliance*. July.

San Joaquin River Restoration Program (SJRRP). 2012a. *Minimum Floodplain Habitat Area for Spring and Fall-Run Chinook Salmon*. November.

San Joaquin River Restoration Program (SJRRP). 2012b. Attachment A – Initial Alternatives Evaluation, in *Mendota Pool Bypass and Reach 2B Improvements Project, Project Description Technical Memorandum*. October.

San Joaquin River Restoration Program (SJRRP). 2015a. *Mendota Pool Bypass and Reach 2B Improvements Project: Draft Environmental Impact Statement/Environmental Impact Report.* June.

San Joaquin River Restoration Program (SJRRP). 2015b. *Revised Framework for Implementation.* July.

Sommer, T.R., M.L. Nobriga, W.C. Harrell, W. Batham, and W.J. Kimmerer. 2001. *Floodplain rearing of juvenile Chinook salmon: evidence of enhanced growth and survival*. Canadian Journal of Fisheries and Aquatic Sciences. Volume 58. Pages 325–333.

Sommer, T.R., W.C. Harrell, A.M. Solger, B. Tom, and W. Kimmerer. 2004. *Effects of flow variation on channel and floodplain biota and habitats of the Sacramento River, California, USA*. Aquatic Conservation-Marine and Freshwater Ecosystems. Volume 14. Pages 247–261.

Swainson's Hawk Technical Advisory Committee. 2000. *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley*. May 31.

U.S. Army Corps of Engineers (Corps), Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual. Final Report. January.

U.S. Army Corps of Engineers (Corps). 2005. Ordinary High Water Mark Identification. Regulatory Guidance Letter No. 05-05. December 7.

U.S. Army Corps of Engineers (Corps), Environmental Laboratory. 2008. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0). September.

U.S. Fish and Wildlife Service (USFWS). 1993. 50 CFR Part 17 (Final Rule). Endangered and Threatened Wildlife and Plants; Determination of Threatened Status for the Giant Gartner Snake. October 20.

U.S. Fish and Wildlife Service (USFWS). 1997. Appendix A, Guidelines for Restoration and/or Replacement of Giant Garter Snake Habitat, in *Programmatic Consultation with the U.S. Army Corps of Engineers 404 Permitted Projects with Relatively Small Effects on the Giant Garter Snake within Butte, Colusa, Glenn, Fresno, Merced, Sacramento, San Joaquin, Solano, Stanislaus, Sutter and Yolo*

Counties, California. Sacramento Fish and Wildlife Office, Sacramento, California.

U.S. Fish and Wildlife Service (USFWS). 1999a. *Conservation Guidelines for the Valley Elderberry Longhorn Beetle*. Sacramento Fish and Wildlife Office, Sacramento, California. July 9.

U.S. Fish and Wildlife Service (USFWS). 1999b. *U.S. Fish and Wildlife Service Standardized Recommendations for Protection of the San Joaquin Kit Fox Prior to or During Ground Disturbance*. Sacramento Fish and Wildlife Office. June.

U.S. Fish and Wildlife Service (USFWS). 2001. *Least Bell's Vireo Survey Guidelines*. January 19.

U.S. Fish and Wildlife Service (USFWS). 2010. *Best Management Practices to Minimize Adverse Effects to Pacific Lamprey (Entosphenus tridentatus)*. April.

Appendix A
Conservation Measures

Table A-1.
Conservation Measures for Biological Resources That May Be Affected by Project Actions

Conservation Measure and Identifier	Applicable Habitat and/or Species, and Conservation Measure Description	Regulatory Agency
VELB	**Valley Elderberry Longhorn Beetle**	
VELB-1. Avoid and Minimize Effects to Species	If elderberry shrubs and valley elderberry longhorn beetle are anticipated within the project area, within 1 year before the commencement of ground-disturbing activities, a qualified biologist shall identify any elderberry shrubs in the project footprint. Qualified biologist(s) will survey potentially affected shrubs for valley elderberry longhorn beetle exit holes in stems greater than 1 inch in diameter. If elderberry shrubs are found on or adjacent to the construction project site, if feasible, a 100-foot-wide avoidance buffer – measured from the dripline of the plant – will be established around elderberry shrubs with stems greater than 1 inch in diameter at ground level and will be clearly identified in the field by staking, flagging, or fencing. No activities will occur within the buffer areas and worker awareness training and biological monitoring will be conducted to ensure that avoidance measures are being implemented.	USFWS
VELB -2. Compensate for Temporary or Permanent Loss of Habitat	The project proponent will consult with USFWS to determine appropriate compensation ratios. Compensatory mitigation measures will be consistent with the *Conservation Guidelines for Valley Elderberry Longhorn Beetle* (USFWS 1999a), or current guidance. Compensatory mitigation for adverse effects may include transplanting elderberry shrubs during the dormant season (November 1 to February 15), if feasible, to an area protected in perpetuity, as well as required additional elderberry and associated native plantings and approved by USFWS. If off-site compensation includes dedication of conservation easements, purchase of mitigation credits, or other off-site conservation measures, the details of these measures will be included in the mitigation plan and must occur with full endowments for management in perpetuity. The plan will include information on responsible parties for long-term management, holders of conservations easements, long-term management requirements, and other details, as appropriate, for the preservation of long-term viable populations.	USFWS

Table A-1.
Conservation Measures for Biological Resources That May Be Affected by Project Actions

Conservation Measure and Identifier	Applicable Habitat and/or Species, and Conservation Measure Description	Regulatory Agency
BNLL	**Blunt-Nosed Leopard Lizard**	
BNLL-1. Avoid and Minimize Effects to Species	Three areas have been identified as having potential blunt-nosed leopard lizard habitat based on aerial maps. These areas include approximately 2,460 acres along the southwest side of the San Joaquin River in Reach 2, approximately 490 acres in a portion of the Eastside Bypass and adjacent lands near Reach 4A of the San Joaquin River, and approximately 2,938 acres encompassing the northern side of the Mariposa Bypass and parcels north of the Mariposa Bypass and west of the Eastside Bypass. Within 1 year before the commencement of the proposed project, focused site visits and habitat assessment will be conducted on these lands. Based on focused assessment, and discussions with the USFWS and DFW, protocol-level surveys may be conducted. If blunt-nosed leopard lizard are detected within or adjacent to the project site, measures that will avoid direct take of this species will be developed in cooperation with USFWS and DFW and implemented before ground disturbing activities.	USFWS DFW
BNLL-2. Compensate for Temporary or Permanent Loss of Habitat or Species	Compensation for impacts to the species, if needed, will be determined in coordination with USFWS and DFW, as appropriate.	USFWS DFW
PLANTS	**Other Special-Status Plants**	
PLANTS-1. Avoid and Minimize Effects to Special-Status Plants	Within 1 year before the commencement of ground-disturbing activities, habitat assessment surveys for the special-status plants listed in Table 1 of Appendix L of the PEIS/R, “Biological Resources – Vegetation and Wildlife,” that are applicable to Reach 2B will be conducted by a qualified botanist, in accordance with the most recent USFWS and DFW guidelines and at the appropriate time of year when the target species would be in flower or otherwise clearly identifiable. Locations of special-status plant populations will be clearly identified in the field by staking, flagging, or fencing a minimum 100-foot-wide buffer around them before the commencement of activities that may cause disturbance. No activity shall occur within the buffer area, and worker awareness training and biological monitoring will be conducted to ensure that avoidance measures are being implemented. Some special-status plant species are annual plants, meaning that a plant completes its entire life cycle in one growing season. Other special-status plant species are perennial plants that return year after year until they reach full maturity. Because of the differences in plant life histories, all general conservation measures will be developed on a case-by-case basis and will include strategies that are species- and	USFWS DFW

Table A-1.
Conservation Measures for Biological Resources That May Be Affected by Project Actions

Conservation Measure and Identifier	Applicable Habitat and/or Species, and Conservation Measure Description	Regulatory Agency
	site-specific to avoid impacts to special-status plants.	
GGS	**Giant Garter Snake**	
GGS-1. Avoid and Minimize Loss of Habitat for Giant Garter Snake	If giant garter snake habitat is anticipated to be present within the project area, preconstruction surveys will be completed by a qualified biologist approved by USFWS and DFW within a 24-hour period before any ground disturbance of potential giant garter snake habitat. If construction activities stop on the project site for a period of 2 weeks or more, a new giant garter snake survey will be completed no more than 24 hours before the restart of construction activities. Avoidance of suitable giant garter snake habitat, as defined by USFWS (USFWS 1993) and DFW, will occur by demarcating and maintaining a 300-foot-wide buffer around these areas. For projects within potential giant garter snake habitat, all activity involving disturbance of potential giant garter snake habitat will be restricted to the period between May 1 and October 1, the active season for giant garter snakes. The construction site shall be re-inspected if a lapse in construction activity of 2 weeks or greater has occurred. Clearing will be confined to the minimal area necessary to facilitate construction activities. Giant garter snake habitat within or adjacent to the project will be flagged, staked, or fenced and designated as an Environmentally Sensitive Area. No activity shall occur within this area, and USFWS-approved worker awareness training and biological monitoring will be conducted to ensure that avoidance measures are being implemented. Construction activities shall be minimized within 200 feet of the banks of giant garter snake habitat. Movement of heavy equipment will be confined to existing roadways to minimize habitat disturbance. Vegetation shall be hand-cleared in areas where giant garter snakes are suspected to occur. Exclusionary fencing with one-way exit funnels shall be installed at least 1 month before activities to allow the species to passively leave the area and to prevent reentry into work zones, per USFWS and/or DFW guidance. If a giant garter snake is found during construction activities, USFWS, DFW, and the project's biological monitor will immediately be notified. The biological monitor, or his/her assignee, will stop construction in the vicinity of the find and allow the snake to leave on its own. The monitor will remain in the area for the remainder of the work day to ensure the snake is not harmed. Escape routes for giant garter snake should be determined in advance of construction and snakes will be allowed to leave on their own. If a giant garter snake does not leave on its own within 1 working day, USFWS and DFW will be consulted. All construction-related holes shall be covered to prevent entrapment of	Reclamation USFWS DFW

Table A-1.
Conservation Measures for Biological Resources That May Be Affected by Project Actions

Conservation Measure and Identifier	Applicable Habitat and/or Species, and Conservation Measure Description	Regulatory Agency
	individuals. Where applicable, construction areas shall be dewatered 2 weeks before the start of activities to allow giant garter snakes and their prey to move out of the area before any disturbance.	
GGS-2. Compensate for Temporary or Permanent Loss of Habitat	Temporarily affected giant garter snake aquatic habitat will be restored in accordance with criteria listed in the USFWS Mitigation Criteria for Restoration and/or Replacement of Giant Garter Snake Habitat (Appendix A to *Programmatic Formal Consultation for U.S. Army Corps of Engineers 404 Permitted Projects with Relatively Small Effects on the Giant Garter Snake Within Butte, Colusa, Glenn, Fresno, Merced, Sacramento, San Joaquin, Solano, Stanislaus, Sutter, and Yolo Counties, California* (USFWS 1997)), or the most current criteria from USFWS or DFW. Permanent loss of giant garter snake habitat will be compensated at a ratio and in a manner consulted on with USFWS and DFW. Compensation may include preservation and enhancement of existing populations, restoration or creation of suitable habitat, or purchase of credits at a regulatory-agency-approved mitigation bank in sufficient quantity to compensate for the effect. Credit purchases, land preservation, or land enhancement to minimize effects to giant garter snakes should occur geographically close to the impact area. If off-site compensation is chosen, it shall include dedication of conservation easements, purchase of mitigation credits, or other off-site conservation measures, and the details of these measures will be included in the mitigation plan and must occur with full endowments for management in perpetuity. The plan will include information on responsible parties for long-term management, holders of conservations easements, long-term management requirements, and other details, as appropriate, for the preservation of long-term viable populations.	USFWS DFW
WPT	**Western Pond Turtle**	
WPT-1. Avoid and Minimize Loss of Individuals	A qualified biologist will conduct surveys in aquatic habitats to be dewatered and/or filled during project construction. Surveys will be conducted immediately after dewatering and before fill of aquatic habitat suitable for western pond turtles. If western pond turtles are found, the biologist will capture them and move them to nearby USFWS- and/or DFW-approved areas of suitable habitat that will not be disturbed by project construction.	DFW

Table A-1.
Conservation Measures for Biological Resources That May Be Affected by Project Actions

Conservation Measure and Identifier	Applicable Habitat and/or Species, and Conservation Measure Description	Regulatory Agency
EAGLE	**Bald Eagle and Golden Eagle**	
EAGLE-1. Avoid and Minimize Effects to Bald and Golden Eagles (as Defined in the Bald and Golden Eagle Protection Act)	Surveys for bald and golden eagle nests will be conducted within 2 miles of any proposed project within areas supporting suitable nesting habitat and important eagle roost sites and foraging areas. These surveys will be conducted in accordance with the USFWS *Protocol for Evaluating Bald Eagle Habitat and Populations in California* and DFW *Bald Eagle Breeding Survey Instructions* or current guidance (*USFWS Draft Project Design Criteria and Guidance for Bald and Golden Eagles*). If an active eagle's nest is found, project disturbance will not occur within ½-mile of the active nest site during the breeding season (typically December 30 to July 1) or any project disturbance if it is shown to disturb the nesting birds. A no-disturbance buffer will be established around the nest site for construction activities in consultation with USFWS and DFW, and will depend on ecological factors, including topography, surrounding vegetation, nest height, and distance to foraging habitat, as well as the type and magnitude of disturbance. Project activity will not occur within the ½-mile-buffer areas, and worker awareness training and biological monitoring will be conducted to ensure that avoidance measures are being implemented.	USFWS DFW
SWH	**Swainson's Hawk**	
SWH-1. Avoid and Minimize Impacts to Swainson's Hawk	Preconstruction surveys for active Swainson's hawk nests will be conducted in and around all potential nest trees within ½-mile of project-related disturbance (including construction-related traffic). These surveys will be conducted in accordance with *the Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley* (Swainson's Hawk Technical Advisory Committee 2000) or current guidance. If known or active nests are identified through preconstruction surveys or other means, a ½-mile no-disturbance buffer shall be established around all active nest sites if construction cannot be limited to occur outside the nesting season (February 15 through September 15). Worker awareness training and biological monitoring will be conducted to ensure that avoidance measures are being implemented.	DFW
SWH-2. Compensate for Loss of Nest Trees and Foraging Habitat	If foraging habitat for Swainson's hawk is removed in association with project implementation, foraging habitat compensation will occur in coordination with DFW. Foraging habitat mitigation may consist of planting and establishing alfalfa, row crops, pasture, or fallow fields. If potential nesting trees are to be removed during construction activities, removal will take place outside of Swainson's hawk nesting season, and the project proponent will develop a plan to replace known	DFW

Table A-1.
Conservation Measures for Biological Resources That May Be Affected by Project Actions

Conservation Measure and Identifier	Applicable Habitat and/or Species, and Conservation Measure Description	Regulatory Agency
	Swainson's hawk nest trees with a number of equivalent native trees that were previously determined to be impacts through consultation with DFW. Compensation shall include dedication of conservation easements, purchase of mitigation credits, or other off-site conservation measures, and the details of these measures will be included in the mitigation plan and must occur with full endowments for management in perpetuity. The plan will include information on responsible parties for long-term management, holders of conservations easements, long-term management requirements, and other details, as appropriate, for the preservation of long-term viable populations.	
RAPTOR	**Other Nesting Raptors**	
RAPTOR-1. Avoid and Minimize Loss of Individual Raptors	Construction activity, including vegetation removal, will only occur outside the typical breeding season for raptors (September 16 to December 31), if raptors are determined to be present. Preconstruction surveys will be conducted by a qualified biologist in areas of suitable habitat to identify active nests in the project footprint. If active nests are located in the project footprint, a no-disturbance buffer will be established until a qualified biologist determines that the nest is no longer active. The size of the buffer shall be established by a qualified biologist in coordination with DFW based on the sensitivity of the resource, the type of disturbance activity, and nesting stage. No activity shall occur within the buffer area, and worker awareness training and biological monitoring will be conducted to ensure that avoidance measures are being implemented.	DFW
RAPTOR-2. Compensate for Loss of Nest Trees	Native trees removed during project activities will be replaced with an appropriate number of native trees, in coordination with DFW.	DFW
RNB	**Riparian Nesting Birds: Least Bell's Vireo**	
RNB-1. Avoid Effects to Species	If least Bell's vireo is anticipated within a project area, a qualified biologist shall make an initial site visit to determine if suitable habitat for the species may exist within the project footprint. Where suitable habitat may be present, reconnaissance-level surveys would be conducted by biologists adhering to guidance offered in *Least Bell's Vireo Survey Guidelines* (USFWS 2001).	USFWS DFW
RNB-2. Avoid, Minimize, and Compensate for Effects to Species	If least Bell's vireo is detected or suspected to be present in the project footprint, information would be collected according to the guidelines stated in RNB-1. USFWS and DFW would be contacted to determine the approach for avoidance, minimization, or compensation.	USFWS DFW

Table A-1.
Conservation Measures for Biological Resources That May Be Affected by Project Actions

Conservation Measure and Identifier	Applicable Habitat and/or Species, and Conservation Measure Description	Regulatory Agency
MBTA	**Other Birds Protected by the Migratory Bird Treaty Act**	
MBTA-1. Avoid and Minimize Effects to Species	Native nesting birds will be avoided by not conducting project activity, including vegetation removal, during the typical breeding season (February 1 to September 1), if species covered under the Migratory Bird Treaty Act and Fish and Game Code sections 3503, 3503.5, and 3513 are determined to be present. An Avian Protection Plan shall be established in coordination with USFWS and DFW. Any overhead utility companies within the project area, whose lines, poles, or towers may be moved in association with the project, will also be consulted as part of the Avian Protection Plan.	USFWS DFW
BRO	**Burrowing Owl**	
BRO-1. Avoid Loss of Species	Preconstruction surveys for burrowing owls will be conducted in areas supporting potentially suitable habitat and within 30 days before the start of construction activities. If ground-disturbing activities are delayed or suspended for more than 30 days after the preconstruction survey, the site should be resurveyed. These surveys and mitigation will be conducted in accordance with the *Burrowing Owl Survey Protocol and Mitigation Guidelines* (The California Burrowing Owl Consortium 1993), or current guidance. Occupied burrows shall not be disturbed during the breeding season (February 1 through August 31). A minimum 160-foot-wide buffer shall be placed around occupied burrows during the nonbreeding season (September 1 through January 31), and a 250-foot-wide buffer shall be placed around occupied burrows during the breeding season. Ground-disturbing activities shall not occur within the designated buffers.	DFW
BRO-2. Minimize Impacts to Species	If a DFW-approved biologist can verify through noninvasive methods that owls have not begun egg-laying and incubation, or that juveniles from occupied burrows are foraging independently and are capable of independent survival, a plan shall be coordinated with DFW to offset burrow habitat and foraging areas on the project site if burrows and foraging areas are taken by SJRRP actions. Mitigation measures will be consistent with the *Staff Report on Burrowing Owl Mitigation* (DFW 2012), or current guidance. If destruction of occupied burrows occurs, existing unsuitable burrows should be enhanced (enlarged or cleared of debris) or new burrows created. This should be done in consultation with DFW. Passive owl relocation techniques must be implemented. Owls should be excluded from burrows in the immediate impact zone within a 160-foot-wide buffer zone by installing one-way doors in burrow entrances. These doors shall be in place at least 48 hours before excavation to insure the owls have departed. The project area shall be monitored daily for 1 week to confirm owl	DFW

Table A-1.
Conservation Measures for Biological Resources That May Be Affected by Project Actions

Conservation Measure and Identifier	Applicable Habitat and/or Species, and Conservation Measure Description	Regulatory Agency
	departure from burrows before any ground-disturbing activities. Where possible, burrows should be excavated using hand tools and refilled to prevent reoccupation. Sections of flexible plastic pipe should be inserted into the tunnels during excavation to maintain an escape route for any animals inside the burrow.	
BAT	**Special-Status Bats**	
BAT-1. Avoid and Minimize Loss of Species	If suitable roosting habitat for special-status bats will be affected by project construction (e.g., removal of buildings, modification of bridges), surveys for roosting bats on the project site will be conducted by a qualified biologist. The type of survey will depend on the condition of the potential roosting habitat and may include visual surveys or use of acoustic detectors. Visual surveys may consist of a daytime pedestrian survey for evidence of bat use (e.g., guano) and/or an evening emergence survey for the presence or absence of bats and will include trees within ¼-mile of project construction activities. The type of survey will depend on the condition of the potential roosting habitat. If no bat roosts are found, then no further study is required. If evidence of bat use is observed, the number and species of bats using the roost will be determined. Bat detectors may be used to supplement survey efforts. If roosts are determined to be present and must be removed, the bats will be excluded from the roosting site before the facility is removed. A mitigation program addressing compensation, exclusion methods, and roost removal procedures will be developed in consultation with DFW before implementation. Exclusion methods may include use of one-way doors at roost entrances (bats may leave, but not reenter), or sealing roost entrances when a site can be confirmed to contain no bats. Exclusion efforts may be restricted during periods of sensitive activity (e.g., during hibernation or while females in maternity colonies are nursing young).	DFW
BAT-2. Compensate for Loss of Habitat	The loss of each roost will be replaced, in consultation with DFW, and may include construction and installation of bat boxes suitable to the bat species and colony size excluded from the original roosting site. Roost replacement will be implemented before bats are excluded from the original roost sites. Once the replacement roosts are constructed and it is confirmed that bats are not present in the original roost sites, the structure may be removed.	DFW
FKR	**Fresno Kangaroo Rat**	
FKR-1. Avoid and Minimize Effects to Species	Preconstruction surveys will be conducted by a qualified biologist per USFWS and DFW survey methodology to determine if potential burrows for Fresno kangaroo rat are present in the project footprint. Surveys will be conducted within 30 days before ground-disturbing	USFWS DFW

Table A-1.
Conservation Measures for Biological Resources That May Be Affected by Project Actions

Conservation Measure and Identifier	Applicable Habitat and/or Species, and Conservation Measure Description	Regulatory Agency
	activities. The biologist will conduct burrow searches by systematically walking transects, which shall be adjusted based on vegetation height and topography, and in coordination with USFWS and DFW. Transects shall be used to identify the presence of kangaroo rat burrows. When burrows are found within 100 feet of the Project footprint, focused live trapping surveys shall be conducted by a qualified and permitted biologist, following a methodology approved in advance by USFWS and DFW. Additional conservation measures may be developed pending the results of surveys, and in consultation with USFWS and DFW. Construction activities shall be conducted when they are least likely to affect the species (i.e., after the normal breeding season of December through September (Ahlborn 1999)). This timing shall be coordinated with USFWS and DFW.	
FKR-3. Compensate for Temporary or Permanent Loss of Habitat or Species	Compensation for impacts to the species, if needed, will be determined in coordination with DFW and USFWS, as appropriate.	USFWS DFW
SJKF	**San Joaquin Kit Fox**	
SJKF-1. Avoid and Minimize Effects to Species	A qualified biologist will conduct preconstruction surveys no less than 14 days and no more than 30 days before the commencement of activities to identify potential dens more than 5 inches in diameter. The project proponent shall implement USFWS' (1999b) *Standardized Recommendations for Protection of San Joaquin Kit Fox Prior to or During Ground Disturbance.* The project proponent will notify USFWS and DFW in writing of the results of the preconstruction survey within 30 days after these activities are completed. If dens are located within the proposed work area, and cannot be avoided during construction activities, a USFWS-approved biologist will determine if the dens are occupied. If occupied dens are present within the proposed work, their disturbance and destruction shall be avoided. Exclusion zones will be implemented following the latest USFWS procedures (currently USFWS 1999b). The project proponent will notify USFWS and DFW immediately if a natal or pupping den is found in the survey area. The project proponent will present the results of preactivity den searches within 5 days after these activities are completed and before the start of construction activities in the area. Construction activities shall be conducted when they are least likely to affect the species (i.e., after the normal breeding season of December–April (Ahlborn 2000)). This timing shall be coordinated with USFWS and	USFWS DFW

Table A-1.
Conservation Measures for Biological Resources That May Be Affected by Project Actions

Conservation Measure and Identifier	Applicable Habitat and/or Species, and Conservation Measure Description	Regulatory Agency
	DFW.	
PL	**Pacific Lamprey**	
PL-1. Avoid and Minimize Effects to Species	A qualified biologist will conduct preconstruction surveys as outlined in Attachment A of USFWS' *Best Management Practices to Minimize Adverse Effects to Pacific Lamprey* (*Entosphenus tridentatus*) (2010). Work in documented areas of Pacific lamprey presence will be timed to avoid in-channel work during typical lamprey spawning (March 1 to July 1). If temporary dewatering in documented areas of lamprey presence is required for instream channel work, salvage methods shall be implemented to capture and move ammocoetes to a safe area, in consultation with USFWS.	USFWS
RHSNC	**Riparian Habitat and Other Sensitive Natural Communities**	
RHSNC-1. Avoid and Minimize Loss of Riparian Habitat and Other Sensitive Natural Communities	Biological surveys will be conducted to identify, map, and quantify riparian and other sensitive habitats in potential construction areas. Construction activities will be avoided in areas containing sensitive natural communities, as appropriate.	DFW
RHSNC-2. Compensate for Loss of Riparian Habitat and Other Sensitive Natural Communities	The Riparian Habitat Mitigation and Monitoring Plan for the SJRRP will be developed and implemented in coordination with DFW. Credits for increased acreage or improved ecological function or riparian and wetland habitats resulting from the implementation of SJRRP actions will be applied as compensatory mitigation before additional compensatory measures are required. If losses of other sensitive natural communities (e.g., recognized as sensitive by CNDDB, but not protected under other regulations or policies) would not be offset by the benefits of the SJRRP, then additional compensation will be provided through creating, restoring, or preserving in perpetuity in-kind communities at a sufficient ratio for no net loss of habitat function or acreage. The appropriate ratio will be determined in consultation with USFWS or DFW, depending on agency jurisdiction.	DFW
WUS	**Waters of the United States/Waters of the State**	
WUS-1. Identify and Quantify Wetlands and Other Waters of the United	Before SJRRP actions that may affect waters of the United States or waters of the State, Reclamation will map the distribution of wetlands (including vernal pools and other seasonal wetlands) in the Eastside and Mariposa bypasses. The project proponent will determine, based on the mapped distribution	Corps

Table A-1.
Conservation Measures for Biological Resources That May Be Affected by Project Actions

Conservation Measure and Identifier	Applicable Habitat and/or Species, and Conservation Measure Description	Regulatory Agency
States	of these wetlands and hydraulic modeling and field observation, the acreage of effects, if any, on waters of the United States. If it is determined that vernal pools or other seasonal wetlands will be affected by the SJRRP, the project proponent will conduct a delineation of waters of the United States, and submit the delineation to the Corps for verification. The delineation will be conducted according to methods established in the Corps *Wetlands Delineation Manual* and *Arid West Supplement* (Corps Environmental Laboratory 1987, 2008). Construction and modification of road crossings, control structures, fish barriers, fish passages, and other structures will be designed to minimize effects on waters of the United States and waters of the State, and will employ BMPs to avoid indirect effects on water quality.	
WUS-2. Obtain Permits and Compensate for Any Loss of Wetlands and Other Waters of the United States/Waters of the State	The project proponent, in coordination with the Corps, will determine the acreage of effects on waters of the United States and waters of the State that will result from implementation of the SJRRP. The project proponent will adhere to a “no net loss” basis for the acreage of wetlands and other waters of the United States and waters of the State that will be removed and/or degraded. Wetland habitat will be restored, enhanced, and/or replaced at acreages and locations and by methods agreed on by the Corps and the Central Valley RWQCB, and DFW, as appropriate, depending on agency jurisdiction. The project proponent will obtain Section 404 and Section 401 permits and comply with all permit terms. The acreage, location, and methods for compensation will be determined during the Section 401 and Section 404 permitting processes. The compensation will be consistent with recommendations in the Fish and Wildlife Coordination Act Report (Appendix F of the PEIS/R).	Corps
INV	**Invasive Plants**	
INV-1. Implement the Invasive Vegetation Monitoring and Management Plan	Reclamation will implement the Invasive Vegetation Monitoring and Management Plan for the SJRRP (Appendix L of the PEIS/R), which includes measures to monitor, control, and where possible eradicate, invasive plant infestations during flow releases and construction activities. The implementation of the Invasive Vegetation Monitoring and Management Plan (Appendix L of the PEIS/R) will include monitoring procedures, thresholds for management responses, success criteria, and adaptive management measures for controlling invasive plant species. The control of invasive weeds and other recommended actions in the Invasive Vegetation Monitoring and Management Plan (Appendix L of the PEIS/R) will be consistent with recommendations in the Fish and Wildlife Coordination Act Report (Appendix F of the PEIS/R).	Reclamation

Table A-1.
Conservation Measures for Biological Resources That May Be Affected by Project Actions

Conservation Measure and Identifier	Applicable Habitat and/or Species, and Conservation Measure Description	Regulatory Agency
CP	**Conservation Plans**	
CP-1. Remain Consistent with Approved Conservation Plans	Facility siting and construction activities will be conducted in a manner consistent with the goals and strategies of adopted habitat conservation plans, natural community conservation plans, or other approved local, regional, or State habitat conservation plans to the extent feasible. Coordination shall occur with USFWS and/or DFW, as appropriate.	USFWS DFW
CP-2. Compensate Effects Consistent with Approved Conservation Plans	The project proponent shall compensate effects consistent with applicable conservation plans and implement all applicable measures required by the plans.	USFWS DFW
GS	**Southern Distinct Population Segment of North American Green Sturgeon**	
GS-1. Avoid and Minimize Loss of Habitat And Individuals	The SJRRP will be operated in such a way that actions affecting green sturgeon habitat shall be done in accordance with existing operating criteria of the CVP and SWP, and prevailing and relevant laws, regulations, BOs, and court orders in place when the action(s) are performed.	NMFS
CVS	**Central Valley Steelhead**	
CVS-1. Avoid Loss of Habitat and Risk of Take of Species	Impacts to habitat conditions (i.e., changes in flows potentially resulting in decreased flows in the tributaries, increases in temperature, increases in pollutant concentration, change in recirculation/recapture rates and methods, decrease in floodplain connectivity, removal of riparian vegetation, decreased in quality rearing habitat, etc.) must be analyzed in consultation with NMFS. The Hills Ferry Barrier will be operated and maintained to exclude Central Valley steelhead from the Restoration Area during construction activities and until suitable habitat conditions are restored. Maintenance of conservation measures will be conducted to the extent necessary to ensure that the overall long-term habitat effects of the project are positive. Before implementation of site-specific actions, the action agency shall conduct an education program for all agency and contracted employees relative to the Federally listed species that may be encountered within the study area of the action, and required practices for their avoidance and protection. A NMFS-appointed representative shall be identified to employees and contractors to ensure that questions regarding avoidance and protection measures are addressed in a timely manner. Disturbance of riparian vegetation will be avoided to the greatest extent practicable.	NMFS

Table A-1.
Conservation Measures for Biological Resources That May Be Affected by Project Actions

Conservation Measure and Identifier	Applicable Habitat and/or Species, and Conservation Measure Description	Regulatory Agency
	A spill prevention plan will be prepared describing measures to be taken to minimize the risk of fluids or other materials used during construction (e.g., oils, transmission and hydraulic fluids, cement, fuel) from entering the San Joaquin River or contaminating riparian areas adjacent to the river itself. In addition to a spill prevention plan, a cleanup protocol will be developed before construction begins and shall be implemented in case of a spill. Stockpiling of materials, including portable equipment, vehicles and supplies, such as chemicals, shall be restricted to the designated construction staging areas, exclusive of any riparian and wetland areas. A qualified biological monitor will be present during all construction activities, including clearing, grubbing, pruning, and trimming of vegetation at each job site during construction initiation, midway through construction, and at the close of construction, to monitor implementation of conservation measures and water quality. The San Joaquin River channel shall be designed to decrease or eliminate predator holding habitat, in coordination with NMFS.	
CVS-2. Minimize Loss of Habitat and Risk of Take of Species	In-channel construction activities that could affect designated critical habitat for Central Valley steelhead will be limited to the low-flow period between June 1 and October 1 to minimize potential for adversely affecting Federally listed anadromous salmonids during their emigration period. In-channel construction activities that could affect designated critical habitat for Central Valley steelhead will be limited to daylight hours during weekdays, leaving a nighttime and weekend period of passage for Federally listed fish species. Construction BMPs for off-channel staging, and storage of equipment and vehicles, will be implemented to minimize the risk of contaminating the waters of the San Joaquin River by spilled materials. BMPs will also include minimization of erosion and stormwater runoff, as appropriate. Riparian vegetation removed or damaged will be replaced at a ratio, coordinated with NMFS, within the immediate area of the disturbance to maintain habitat quality. If individuals of listed species are observed present within a project area, NMFS must be notified. NMFS personnel shall have access to construction sites during construction, and following completion, to evaluate species presence and condition and/or habitat conditions. If bank stabilization activities should be necessary, then such stabilization shall be constructed to minimize predator habitat, minimize erosion potential, and contain material suitable for supporting riparian vegetation.	NMFS

Table A-1.
Conservation Measures for Biological Resources That May Be Affected by Project Actions

Conservation Measure and Identifier	Applicable Habitat and/or Species, and Conservation Measure Description	Regulatory Agency
SRCS	**Central Valley Spring-Run Chinook Salmon**	
SRCS-1. Avoid and Minimize Loss of Habitat and Individuals	The SJRRP will be operated in such a way that actions in the vicinity of spring-run Chinook salmon habitat shall be done in accordance with existing operating criteria of the CVP and SWP, and prevailing and relevant laws, regulations, BOs, and court orders in place at the time the actions are performed. SJRRP actions shall be performed in accordance with the Experimental Population 4(d) rule, as it is developed, and where applicable.	NMFS DFW
EFH	**Essential Fish Habitat (Pacific Salmonids)**	
EFH-1. Avoid Loss of Habitat and Risk of Take of Species	Impacts to habitat conditions (e.g., changes in flows potentially resulting in decreased flows in the tributaries, increases in temperature, increases in pollutant concentration, change in recirculation/recapture rates and methods, decrease in floodplain connectivity, removal of riparian vegetation, decreased in quality rearing habitat) must be analyzed in consultation with NMFS. The Hills Ferry Barrier will be operated and maintained to exclude Pacific salmonids from the Restoration Area during construction activities, and until suitable habitat conditions are restored. Under historical operations, the Hills Ferry Barrier is operated September through mid-December. The period of operation under this measure may vary from historical operations. Maintenance of conservation measures will be conducted to the extent necessary to ensure that the overall long-term habitat effects of the project are positive. Before implementation of site-specific actions, the action agency shall conduct an education program for all agency and contracted employees relative to the Federally listed species that may be encountered within the study area of the action, and required practices for their avoidance and protection. A NMFS-appointed representative shall be identified to employees and contractors to ensure that questions regarding avoidance and protection measures are addressed in a timely manner. Disturbance of riparian vegetation will be avoided to the greatest extent practicable. A spill prevention plan will be prepared describing measures to be taken to minimize the risk of fluids or other materials used during construction (e.g., oils, transmission and hydraulic fluids, cement, fuel) from entering the San Joaquin River or contaminating riparian areas adjacent to the river itself. In addition to a spill prevention plan, a cleanup protocol will be developed before construction begins and shall be implemented in case of a spill. Stockpiling of materials, including portable equipment, vehicles and supplies, such as chemicals, shall be restricted to the designated	NMFS

Table A-1.
Conservation Measures for Biological Resources That May Be Affected by Project Actions

Conservation Measure and Identifier	Applicable Habitat and/or Species, and Conservation Measure Description	Regulatory Agency
	construction staging areas, exclusive of any riparian and wetland areas. A qualified biological monitor will be present during all construction activities, including clearing, grubbing, pruning, and trimming of vegetation at each job site during construction initiation, midway through construction, and at the close of construction to monitor implementation of conservation measures and water quality. The bottom topography of the San Joaquin River channel will be designed to decrease or eliminate predator holding habitat.	
EFH-2. Minimize Loss of Habitat and Risk of Take from Implementation of Construction Activities	In-channel construction activities that could affect habitat for will be limited to the low-flow period between June 1 and October 1 to minimize potential for adversely affecting Federally listed anadromous salmonids during their emigration period. In-channel construction activities that could affect habitat for Pacific salmonids will be limited to daylight hours during weekdays, leaving a nighttime and weekend period of passage for Federally listed fish species. Construction BMPs for off-channel staging and storage of equipment and vehicles will be implemented to minimize the risk of contaminating the waters of the San Joaquin River by spilled materials. BMPs will also include minimization of erosion and stormwater runoff, as appropriate. Riparian vegetation removed or damaged will be replaced, as applicable, in accordance with the Riparian Habitat Monitoring Management and Mitigation Plan, and will be coordinated with the USFWS and NMFS and/or other agencies as appropriate. If individuals of listed species are observed present within a project area, NMFS must be notified. NMFS personnel shall have access to construction sites during construction and following completion to evaluate species presence and condition and/or habitat conditions. If bank stabilization activities should be necessary, then such stabilization shall be constructed to minimize predator habitat, minimize erosion potential, and contain material suitable for supporting riparian vegetation.	NMFS

Acronyms:
BMP = best management practice
BO = Biological Opinion
CNDDB = California Natural Diversity Database
Corps = U.S. Army Corps of Engineers
CVP = Central Valley Project
DFW = California Department of Fish and Wildlife
NMFS = National Marine Fisheries Service
PEIS/R = Program Environmental Impacts Statement/Report
Reclamation = U.S. Department of the Interior, Bureau of Reclamation
RWQCB = Regional Water Quality Control Board
SJRRP = San Joaquin River Restoration Program
State = State of California
SWP = State Water Project
USFWS = U.S. Fish and Wildlife Service