THE RANCH PLAN PLANNED COMMUNITY

PLANNING AREAS 3 AND 4 RUNOFF MANAGEMENT PLAN

Michael Baker INTERNATIONAL

TECHNICAL APPENDIX K

Water Quality

THE RANCH PLAN PLANNED COMMUNITY

PLANNING AREAS 3 AND 4 RUNOFF MANAGEMENT PLAN

Michael Baker INTERNATIONAL

TECHNICAL APPENDIX K.1

Water Balance Analysis – *E-submittal Only*

Gobernadora Pre-developed Flow

	501 POC 1 Predeveloped flow	502 POC 2 Predeveloped flow	505 POC 5 Predeveloped flow	504 POC 4 Predeveloped flow	505 POC 5 Predeveloped flow	506 POC 6 Predeveloped flow	507 POC 7 Predeveloped flow
10/1/1958	0.49	3.34	10.25	10.02	0.59	8.93	0.41
10/1/1959	1.48	10.05	31.43	29.68	1.92	26.74	1.75
10/1/1960	0.00	0.03	0.08	0.06	0.01	0.06	0.02
10/1/1961	4.98	37.06	112.32	107.58	7.28	95.09	13.75
10/1/1962	0.49	3.12	9.98	9.04	0.58	8.50	0.46
10/1/1963	0.29	1.66	5.69	4.56	0.34	4.64	0.31
10/1/1964	1.47	10.60	32.36	31.40	2.03	27.57	2.50
10/1/1965	5.92	44.77	135.51	128.31	8.99	114.02	19.22
10/1/1966	6.42	47.79	145.64	137.03	9.62	122.35	19.66
10/1/1967	1.54	10.50	32.74	31.00	2.00	27.86	1.82
10/1/1968	14.37	112.61	337.96	316.36	23.09	282.92	62.11
10/1/1969	1.17	8.09	25.11	24.07	1.54	21.40	1.37
10/1/1970	1.17	8.15	25.03	24.24	1.51	21.53	1.32
10/1/1971	2.16	15.50	47.75	45.07	3.06	40.31	4.54
10/1/1972	6.17	46.71	141.19	133.90	9.32	119.07	19.87
10/1/1973	3.78	27.39	83.95	80.01	5.39	70.95	8.35
10/1/1974	3.07	22.28	68.13	65.04	4.34	57.77	6.89
10/1/1975	1.94	13.78	42.47	40.38	2.67	36.02	3.48
10/1/1976	0.99	6.37	20.32	18.44	1.22	17.17	1.03
10/1/1977	14.13	110.12	330.85	310.01	22.49	277.32	58.81
10/1/1978	8.29	63.65	191.89	180.90	12.86	161.34	30.25
10/1/1979	16.96	133.24	400.46	370.66	27.56	334.40	76.63
10/1/1980	0.24	1.63	5.04	4.80	0.29	4.38	0.24
10/1/1981	3.93	29.31	89.09	84.34	5.84	75.13	11.50
10/1/1982	13.24	102.25	308.16	288.32	20.84	258.37	52.45
10/1/1983	1.93	13.79	42.42	40.36	2.68	35.97	3.70
10/1/1984	3.99	29.34	89.58	84.83	5.83	75.52	10.50
10/1/1985	5.51	40.72	124.31	116.86	8.15	104.62	15.81
10/1/1986	0.28	1.83	5.69	5.37	0.33	4.92	0.30
10/1/1987	1.10	7.54	23.50	22.15	1.45	19.93	1.42
10/1/1988	2.25	16.01	49.16	47.29	3.07	41.84	3.64
10/1/1989	2.07	14.93	46.08	43.05	2.99	38.69	4.78
10/1/1990	6.17	46.80	141.95	132.87	9.51	119.03	21.51
10/1/1991	5.86	44.13	133.90	125.98	8.88	112.60	19.09
10/1/1992	15.97	124.63	374.53	349.74	25.53	313.61	67.91
10/1/1993	1.26	8.62	26.73	25.63	1.62	22.88	1.45
10/1/1994	16.25	126.63	381.45	353.99	26.11	318.66	70.15
10/1/1995	3.13	22.84	69.87	66.41	4.49	59.08	7.25
10/1/1996	7.50	57.23	172.64	163.43	11.49	145.38	26.06
10/1/1997	19.37	151.67	455.57	424.39	31.16	381.21	84.24
10/1/1998	0.07	0.46	1.51	1.23	0.09	1.24	0.13
10/1/1999	2.72	19.71	61.06	57.47	3.88	51.07	5.82
10/1/2000	2.51	18.35	55.87	53.68	3.56	47.48	5.50
10/1/2001	0.00	0.03	0.10	0.06	0.01	0.08	0.02
10/1/2002	6.66	49.69	151.58	141.30	10.08	127.06	21.79
10/1/2003	2.25	16.32	50.15	47.29	3.24	42.27	5.12
10/1/2004	9.26	70.69	213.81	200.44	14.34	179.40	33.93
10/1/2005	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average	4.91	37.28	112.87	105.94	7.53	94.82	17.21

Total Average **380.55**

Gobernadora Inflow to Mitigation

	702 Inflow to POC 2 Mitigated	703 Inflow to POC 3 Mitigated	704 Inflow to POC 4 Mitigated	705 Inflow to POC 5 Mitigated	706 Inflow to POC 6 Mitigated	707 Inflow to POC 7 Mitigated
10/1/1958	12.57	63.72	17.52	7.34	48.27	1.52
10/1/1959	17.85	91.63	62.82	10.56	62.58	2.17
10/1/1960	8.74	42.06	19.31	4.81	22.76	1.03
10/1/1961	33.84	179.99	99.76	21.95	154.98	4.31
10/1/1962	17.17	85.81	52.28	9.75	64.53	2.10
10/1/1963	13.96	69.96	29.14	7.95	45.25	1.66
10/1/1964	22.94	118.16	46.52	13.63	87.87	2.77
10/1/1965	30.83	164.52	120.67	19.86	149.72	3.90
10/1/1966	37.01	195.94	134.01	24.00	182.62	4.72
10/1/1967	17.42	90.01	67.49	10.08	66.82	2.05
10/1/1968	56.36	304.71	294.94	37.99	292.09	7.38
10/1/1969	16.04	82.41	31.31	9.47	67.42	1.92
10/1/1970	17.01	87.31	39.98	10.07	64.24	2.09
10/1/1971	16.46	84.24	67.01	10.19	70.87	2.05
10/1/1972	32.85	176.00	148.30	21.56	146.93	4.19
10/1/1973	27.62	146.72	64.82	17.78	128.06	3.52
10/1/1974	25.70	135.82	76.61	16.38	108.87	3.25
10/1/1975	22.67	116.02	55.14	13.58	93.05	2.75
10/1/1976	23.64	121.18	70.71	13.74	90.48	2.80
10/1/1977	58.03	315.42	305.85	39.82	297.71	7.61
10/1/1978	41.38	223.05	156.66	27.56	198.26	5.36
10/1/1979	51.88	279.33	492.48	34.44	267.86	6.56
10/1/1980	12.81	63.62	24.38	7.35	46.00	1.56
10/1/1981	30.41	158.99	97.55	19.09	126.02	3.85
10/1/1982	59.09	318.18	293.54	39.56	287.49	7.62
10/1/1983	16.83	87.06	62.88	10.33	72.00	2.06
10/1/1984	24.55	129.84	96.57	15.63	100.92	3.13
10/1/1985	35.20	183.65	146.48	22.01	161.37	4.32
10/1/1986	14.33	72.40	26.76	8.24	42.82	1.73
10/1/1987	22.11	113.99	48.82	12.97	79.54	2.67
10/1/1988	21.64	112.10	48.76	13.37	86.91	2.68
10/1/1989	17.71	91.07	79.20	10.58	64.80	2.15
10/1/1990	29.14	154.51	153.50	18.87	144.34	3.69
10/1/1991	30.57	161.49	151.91	19.62	140.89	3.82
10/1/1992	64.44	351.24	308.18	44.16	344.83	8.38
10/1/1993	18.58	95.09	47.14	10.90	64.00	2.20
10/1/1994	56.33	301.67	432.91	36.69	285.62	7.08
10/1/1995	23.04	121.10	72.05	14.58	100.42	2.87
10/1/1996	40.17	216.29	140.79	27.08	197.09	5.29
10/1/1997	68.48	374.11	435.17	47.05	344.70	8.93
10/1/1998	14.43	72.38	16.31	8.11	39.11	1.74
10/1/1999	20.44	105.05	67.84	12.60	84.93	2.51
10/1/2000	23.60	125.08	45.81	15.02	101.86	3.00
10/1/2001	6.98	34.48	15.19	3.87	16.86	0.86
10/1/2002	34.95	183.00	183.31	21.75	163.81	4.30
10/1/2003	17.09	88.61	84.92	10.34	67.89	2.03
10/1/2004	51.37	276.78	165.69	34.13	253.47	6.55
10/1/2005	0.00	0.00	0.00	0.00	0.00	0.00
Average	28.86	152.46	121.26	18.43	130.40	3.63
Total Average			**455.05**			

Gobernadora Mitigated Flow

	802 POC 2 Mitigated flow	803 POC 3 Mitigated flow	804 POC 4 Mitigated flow	805 POC 5 Mitigated flow	806 POC 6 Mitigated flow	807 POC 7 Mitigated flow
10/1/1958	8.84	20.63	18.12	5.53	41.17	1.16
10/1/1959	11.53	21.78	63.71	7.17	50.77	1.51
10/1/1960	4.67	8.71	19.73	2.78	15.06	0.61
10/1/1961	25.87	64.12	101.67	17.59	140.25	3.48
10/1/1962	12.51	26.32	53.53	7.36	55.53	1.62
10/1/1963	8.74	19.00	29.80	5.21	37.95	1.11
10/1/1964	15.78	45.52	47.55	9.96	74.51	2.04
10/1/1965	25.38	73.54	122.56	16.74	139.53	3.35
10/1/1966	30.77	104.02	136.62	20.40	170.43	4.07
10/1/1967	12.34	24.70	68.68	7.33	58.09	1.51
10/1/1968	48.07	176.81	298.71	33.18	276.79	6.55
10/1/1969	12.04	28.81	32.27	7.40	59.71	1.51
10/1/1970	11.57	27.07	40.83	7.24	53.84	1.51
10/1/1971	12.20	32.14	68.03	7.80	65.83	1.55
10/1/1972	23.61	55.44	150.25	16.33	129.56	3.20
10/1/1973	21.63	55.35	66.33	14.44	117.79	2.90
10/1/1974	18.31	41.88	77.79	12.32	94.71	2.46
10/1/1975	16.75	45.83	56.25	10.34	83.18	2.10
10/1/1976	16.67	40.35	72.06	10.12	78.01	2.11
10/1/1977	47.81	144.49	309.80	34.03	278.73	6.56
10/1/1978	32.75	92.51	158.91	22.46	180.38	4.46
10/1/1979	44.09	138.33	497.45	29.88	252.79	5.76
10/1/1980	8.82	21.22	24.96	5.29	37.25	1.12
10/1/1981	21.43	60.97	99.15	14.14	110.76	2.86
10/1/1982	46.40	133.35	297.03	32.61	263.46	6.38
10/1/1983	12.61	29.73	63.73	7.67	64.91	1.54
10/1/1984	17.38	31.73	97.99	11.53	87.36	2.35
10/1/1985	27.75	68.65	148.55	17.98	145.83	3.58
10/1/1986	8.12	20.02	27.36	4.96	32.21	1.06
10/1/1987	14.87	30.51	49.93	9.13	64.82	1.92
10/1/1988	14.99	35.37	49.67	9.78	74.74	1.97
10/1/1989	11.76	31.20	80.35	7.36	54.41	1.53
10/1/1990	23.95	70.74	155.67	15.95	134.04	3.16
10/1/1991	23.43	58.05	153.93	15.65	127.19	3.08
10/1/1992	55.25	188.05	312.71	38.85	328.99	7.46
10/1/1993	11.60	24.31	47.96	7.22	50.88	1.48
10/1/1994	47.55	145.40	437.69	31.49	268.85	6.17
10/1/1995	17.25	46.27	73.30	11.41	88.68	2.27
10/1/1996	31.94	84.06	143.36	22.32	181.35	4.40
10/1/1997	53.32	164.28	439.93	38.39	318.12	7.33
10/1/1998	7.74	20.17	16.58	4.67	26.62	1.03
10/1/1999	14.69	35.25	68.91	9.48	74.94	1.90
10/1/2000	17.33	46.55	46.91	11.56	90.88	2.34
10/1/2001	3.37	3.72	15.48	1.97	11.85	0.43
10/1/2002	28.40	65.01	185.93	17.97	150.95	3.63
10/1/2003	11.78	23.17	86.08	7.55	58.24	1.49
10/1/2004	42.12	125.14	168.49	28.80	235.63	5.62
10/1/2005	0.00	0.00	0.00	0.00	0.00	0.00
Average	22.04	60.64	123.03	14.67	117.82	2.92
Total Average			**341.12**			

San Juan Pre-developed Flow

	501 POC 1 Predeveloped flow	507 POC 7 Predeveloped flow	505 POC 5 Predeveloped flow	506 POC 6 Predeveloped flow
10/1/1958	11.27634	19.86013	9.374588	3.691323
10/1/1959	36.63648	64.38578	29.67586	12.38941
10/1/1960	0.1279241	0.2489598	0.099499717	0.075374521
10/1/1961	167.6658	286.3233	117.9937	53.16893
10/1/1962	10.14975	18.68415	9.201766	4.003749
10/1/1963	5.254079	10.31699	5.32989	2.517105
10/1/1964	42.6157	72.2423	31.69618	13.65589
10/1/1965	213.3215	366.2985	147.1029	68.7204
10/1/1966	222.9868	383.6178	156.1099	72.54771
10/1/1967	38.43726	67.38698	30.95008	12.91524
10/1/1968	590.0675	1022.306	390.7389	189.5846
10/1/1969	29.90824	51.84571	23.67836	9.620096
10/1/1970	29.40305	50.99947	23.45013	9.661535
10/1/1971	64.5686	111.1173	48.00795	21.77228
10/1/1972	221.6674	381.5833	153.218	71.67232
10/1/1973	116.7042	199.4225	85.07366	37.77964
10/1/1974	94.79996	162.4218	69.18612	30.87624
10/1/1975	55.2267	95.13004	41.81021	18.39517
10/1/1976	21.577	39.19996	18.85005	8.10021
10/1/1977	569.4473	987.1313	379.6117	183.8202
10/1/1978	314.5724	543.0617	213.7004	102.0831
10/1/1979	708.7675	1238.707	469.7014	232.7268
10/1/1980	5.457688	9.769399	4.657829	2.002357
10/1/1981	134.8705	232.1798	94.86642	44.00557
10/1/1982	519.5176	901.8751	349.8293	168.6308
10/1/1983	56.08004	96.64388	42.04202	18.56424
10/1/1984	131.0411	225.1555	93.61293	42.77786
10/1/1985	185.9566	321.7079	131.9377	61.35912
10/1/1986	6.217122	11.24316	5.307653	2.276897
10/1/1987	27.92569	48.78496	22.32669	9.544032
10/1/1988	63.28825	108.4363	47.91098	20.47907
10/1/1989	63.66964	109.7234	46.94204	21.95235
10/1/1990	227.4974	393.322	156.4861	74.88049
10/1/1991	209.8795	362.4706	145.6122	68.85784
10/1/1992	649.3078	1128.304	432.361	210.3052
10/1/1993	31.43063	54.85345	25.14379	10.30102
10/1/1994	662.7169	1154.568	441.7665	216.6404
10/1/1995	98.10207	168.1143	71.32764	32.34537
10/1/1996	278.1035	478.6738	189.9782	89.61736
10/1/1997	796.7114	1387.581	529.1863	259.1403
10/1/1998	1.603369	3.041093	1.479448	0.811588
10/1/1999	83.20766	142.3405	61.06124	27.61421
10/1/2000	77.38177	131.9926	56.33992	25.18777
10/1/2001	0.1365157	0.2683023	0.121539	0.1071121
10/1/2002	236.8152	411.5805	165.3326	78.03462
10/1/2003	69.76031	120.171	51.18144	23.41816
10/1/2004	348.716	602.7928	237.8243	113.6908
10/1/2005	0	0	0	0
Average	181.50	314.42	124.66	59.20

Total Average **679.79**

San Juan Inflow to Mitigated

	701 Inflow to POC 1 Mitigated	702 Inflow to POC 2 Mitigated	703 Inflow to POC 3 Mitigated	704 Inflow to POC 4 Mitigated	705 Inflow to POC 5 Mitigated	706 Inflow to POC 6 Mitigated
10/1/1958	24.81315	196.1685	227.5397	2.724146	57.97887	54.90704
10/1/1959	54.30014	353.9236	384.0617	5.315318	131.2413	139.7117
10/1/1960	21.35984	130.8327	154.0702	1.951666	47.21436	53.01643
10/1/1961	96.17714	708.2153	874.1848	12.14866	286.4765	270.9152
10/1/1962	48.87033	307.3619	358.5636	4.24734	115.8257	131.411
10/1/1963	34.50799	234.3644	289.1612	3.340777	88.47083	102.2439
10/1/1964	56.24366	406.7693	483.8306	6.230533	162.2268	171.627
10/1/1965	100.8707	708.7321	865.5759	13.10382	281.2224	255.8408
10/1/1966	114.8858	819.948	1004.326	14.97214	328.0287	298.4312
10/1/1967	55.1613	358.217	426.6359	5.326914	132.2312	142.3045
10/1/1968	220.0634	1478.679	1784.519	30.79052	582.867	490.5597
10/1/1969	37.93924	281.1438	336.7257	4.395202	110.4798	115.274
10/1/1970	43.23794	302.4619	357.8279	4.423572	116.2779	122.2013
10/1/1971	53.60951	349.3419	429.6876	6.355069	134.7776	132.274
10/1/1972	116.162	782.376	973.2585	14.61964	312.1899	288.5938
10/1/1973	70.93586	545.3158	670.4362	9.342835	221.9086	211.0168
10/1/1974	73.44181	525.5821	641.3393	8.851255	204.76	201.7101
10/1/1975	58.56878	413.5498	501.8988	6.649356	161.6944	165.9816
10/1/1976	68.08546	450.9713	536.4892	6.578609	170.9524	193.0292
10/1/1977	225.5166	1525.017	1882.853	31.65944	596.5926	510.8596
10/1/1978	134.2128	962.4814	1192.296	19.25785	392.3185	347.5903
10/1/1979	295.9217	1741.558	2067.634	38.19468	628.3068	523.5444
10/1/1980	29.98981	202.412	238.9989	2.981657	76.27604	85.53345
10/1/1981	89.68151	626.7067	773.363	11.05459	247.7534	241.3146
10/1/1982	220.837	1496.924	1876.513	30.86142	591.9536	516.5837
10/1/1983	54.41866	354.7966	437.7738	6.113654	136.8284	140.1393
10/1/1984	79.42894	551.2515	668.045	10.00428	216.292	205.9905
10/1/1985	116.7564	786.4539	972.0339	14.39693	300.1503	283.8268
10/1/1986	34.56946	239.1301	282.6858	3.411646	94.94846	110.7143
10/1/1987	55.82429	403.5459	478.3	6.046788	151.6693	167.5721
10/1/1988	54.32781	398.0635	491.6974	6.434151	157.4729	158.6387
10/1/1989	61.17864	387.8874	451.7206	6.692061	146.7226	148.4156
10/1/1990	110.992	733.0884	902.9317	14.63292	287.05	255.7077
10/1/1991	111.9553	743.2714	919.3419	14.13907	283.816	260.698
10/1/1992	239.079	1655.194	2062.311	35.07653	663.795	554.0041
10/1/1993	49.02901	341.2112	412.6021	5.25033	132.7925	143.1757
10/1/1994	278.6253	1702.174	2050.862	36.47967	627.7842	529.0443
10/1/1995	66.65876	479.2313	586.7795	8.399334	190.8783	183.7466
10/1/1996	123.4944	897.8308	1107.457	17.27952	363.9866	319.3862
10/1/1997	303.1435	1958.591	2424.083	42.71534	765.7737	638.831
10/1/1998	30.0309	218.7025	256.1412	3.080952	83.95495	97.64523
10/1/1999	59.58638	417.3236	507.2697	7.327464	160.3068	156.2354
10/1/2000	56.98531	443.5998	538.1016	7.333521	178.6439	174.1392
10/1/2001	17.55921	111.7943	124.2557	1.58277	41.17455	47.56703
10/1/2002	132.317	861.9316	1052.323	16.09741	320.4052	295.9992
10/1/2003	62.81829	393.2185	473.3087	6.948931	148.4027	148.7074
10/1/2004	155.2187	1143.068	1417.885	22.26678	461.6508	411.7498
10/1/2005	0	0	0	0	0	0
Average	97.86	662.35	807.44	12.49	257.33	238.26

Total Average **2,075.73**

San Juan Mitigated Flow

	801 POC 1 Mitigated flow	802 POC 2 Mitigated flow	803 POC 3 Mitigated flow	804 POC 4 Mitigated flow	805 POC 5 Mitigated flow	806 POC 6 Mitigated flow
10/1/1958	4.679677	19.75843	0	0	0.7318833	0.3434267
10/1/1959	17.18533	65.26712	0	0	11.48686	9.848165
10/1/1960	5.418518	3.215274	0	0	1.075617	0.943531
10/1/1961	35.34353	144.2095	129.3314	0	46.18737	47.36325
10/1/1962	17.6108	60.89249	30.40391	0	14.46152	20.25475
10/1/1963	8.570123	31.07953	6.991294	0	4.491064	8.249059
10/1/1964	14.52408	29.61025	28.7698	0	14.03838	14.1405
10/1/1965	46.78428	243.4508	185.559	0	71.78724	62.21647
10/1/1966	55.24622	310.1105	253.4894	0	97.56296	86.45652
10/1/1967	20.97811	76.26542	39.69356	0	18.3338	21.08369
10/1/1968	122.3965	695.4794	534.8504	2.555028	205.7539	159.5479
10/1/1969	10.92013	28.86563	33.58797	0	11.75829	15.39875
10/1/1970	12.11388	39.33117	12.89786	0	8.036128	12.64135
10/1/1971	25.63473	71.43214	95.18795	0	31.59254	35.11519
10/1/1972	45.64152	160.2648	85.03378	0	43.44625	33.83356
10/1/1973	23.79624	103.993	88.5365	0	40.57235	38.65188
10/1/1974	24.34522	98.5923	50.24711	0	24.77984	23.99396
10/1/1975	19.42053	54.96625	51.82235	0	19.38366	25.39181
10/1/1976	21.84982	54.13733	27.00723	0	13.47639	22.89482
10/1/1977	117.6415	506.0665	439.4184	4.185689	165.4131	130.4159
10/1/1978	55.86599	242.5826	202.8565	0.09987364	83.52537	64.3968
10/1/1979	193.558	877.4599	704.9871	13.90001	266.9988	205.3981
10/1/1980	6.664265	5.244578	0	0	0.311497	0.4385784
10/1/1981	31.22498	143.0798	82.88712	0	38.56425	29.56792
10/1/1982	104.8336	437.4248	360.4282	1.30336	143.0813	111.7262
10/1/1983	18.84619	53.99838	29.32056	0	15.43415	16.83834
10/1/1984	30.91718	123.472	87.60953	0	41.78588	33.88404
10/1/1985	46.74418	185.9978	123.2109	0	51.22614	42.46798
10/1/1986	7.346423	9.482517	0	0	0.595428	0.6378684
10/1/1987	14.17319	54.91411	21.74452	0	11.34457	11.85457
10/1/1988	15.49648	52.63702	23.95706	0	10.32161	15.09328
10/1/1989	26.29938	104.1731	70.67044	0	28.81462	23.76974
10/1/1990	58.12977	298.8375	229.9686	0	89.96711	75.53228
10/1/1991	50.57611	185.8083	138.734	0	55.30469	47.24033
10/1/1992	126.4639	671.5109	570.0557	3.444557	218.297	173.424
10/1/1993	12.48548	29.97069	0	0	4.467082	3.626032
10/1/1994	167.8705	816.5312	621.0759	7.106186	236.6556	183.6492
10/1/1995	24.56894	100.2931	72.7635	0	33.09674	30.57755
10/1/1996	50.41011	226.4415	179.2319	0	77.76255	65.11594
10/1/1997	161.1206	756.2236	558.4669	9.267281	217.0728	159.0888
10/1/1998	4.623211	0	0	0	0.3350901	0.1338471
10/1/1999	22.31346	81.80946	52.43377	0	25.0026	20.56194
10/1/2000	16.9554	74.82773	63.83718	0	27.29189	27.86464
10/1/2001	4.331312	16.13287	0	0	0.4201449	1.187967
10/1/2002	65.2792	307.6786	221.4617	0	92.78454	79.93647
10/1/2003	27.55458	105.4477	67.63407	0	26.87338	25.5087
10/1/2004	68.6462	331.397	312.2066	0	117.4247	100.6956
10/1/2005	0	0	0	0	0	0
Average	43.90	193.41	146.56	0.89	58.70	49.34

Total Average **492.81**

THE RANCH PLAN PLANNED COMMUNITY

PLANNING AREAS 3 AND 4 RUNOFF MANAGEMENT PLAN

Michael Baker INTERNATIONAL

TECHNICAL APPENDIX K.2

Volume Mitigation

Volume Mitigation 2-yr

Basin	Basin type	Invert (ac)	Design Infiltration rate (in/hr)	Water vol (ac-ft)	Volume infiltrated (ac-ft/day)	Sump vol (1ft deep for hydromod, = water vol for WQ, none for flood	Days drawdown	Total Mitigated Volume (ac-ft)	Source of infiltration rate data	Soil code (Used for NRCS only)	Notes
3A-1	Biofiltration	0.75	0.10	1.78	0.2	0.0	1.0	0.2	Design Infiltration Rate and Worksheet	131	
3A-2	PreTreatment/Forebay	1.11	0.00	6.63	0.0	0.0	1.0	0.0	0	135	NRCS infiltration rates look very low - assumed 0 to be conservative.
3A-3	Infiltration	0.36	0.73	1.54	0.5	0.0	1.0	0.5	Design Infiltration Rate and Worksheet	139	
3A-4	Infiltration	2.21	0.73	9.56	3.2	0.0	1.0	3.2	Design Infiltration Rate and Worksheet	135	
3A-5	Biofiltration	1.58	0.10	4.06	0.3	0.0	1.0	0.3	Design Infiltration Rate and Worksheet	142	
3A-6	Biofiltration	0.99	0.10	2.53	0.2	0.0	1.0	0.2	Design Infiltration Rate and Worksheet	142	
3A-7	Biofiltration	1.08	0.10	2.79	0.2	0.0	1.0	0.2	Design Infiltration Rate and Worksheet	135	
3A-8	Biofiltration	0.38	0.10	1.05	0.1	0.0	1.0	0.1	Design Infiltration Rate and Worksheet	135	
3A-9	Hydromodification	4.23	0.35	36.03	3.0	0.0	2.0	6.0	NRCS	135	
3A-10	Hydromodification	2.05	0.35	11.47	1.4	0.0	2.0	2.9	NRCS	135	
3A-11	Hydromodification	1.98	0.35	11.11	1.4	0.0	2.0	2.8	NRCS	135	
3A-12	Biofiltration	0.08	0.10	0.21	0.02	0.0	1.0	0.02	Design Infiltration Rate and Worksheet	142	
3A-13	Potential Spreading	3	0.00	0.00	0.0	0.0	1.0	0.0	NRCS	142	
3B-1	Flood Control	0.99	0.35	12.60	0.7	0.0	1.0	0.7	NRCS	142	
3B-2	PreTreatment/Forebay	0.3	0.00	5.10	0.0	0.0	1.0	0.0	NRCS	142	
3B-3	Advanced Treatment	1.87	0.00	4.84	0.0	0.0	1.0	0.0	NRCS	179	Adv. Treatment is assumed to mitigate the DCV volume. No infiltration due to permanent pond beneath.
3B-4	Flood Control	1.34	0.35	55.00	0.9	0.0	1.0	0.9	NRCS	142	
3B-5	Infiltration	0.39	0.53	3.44	0.4	0.0	1.0	0.4	NRCS	146	
3B-6	Advanced Treatment	0.21	0.00	0.57	0.0	0.0	1.0	0.0	NRCS	141	Adv. Treatment is assumed to mitigate the DCV volume. No infiltration due to permanent pond beneath.
3C-1	Flood Control	10.53	0.60	84.24	12.6	0.0	1.0	12.6	NRCS	146	
3C-1 Lake	Advanced Treatment	4.17	0.00	6.26	0.0	0.0	1.0	0.0	NRCS	191	
3C-2	Infiltration	4.5	3.99	72.40	35.9	0.0	1.0	35.9	NRCS	146	
3C-3	Flood Control	20.83	0.60	119.59	25.0	0.0	1.0	25.0	NRCS	191	

Basin	Basin type	Invert (ac)	Design Infiltration rate (in/hr)	Water vol (ac-ft)	Volume infiltrated (ac-ft/day)	Sump vol (1ft deep for hydromod, = water vol for WQ, none for flood	Days drawdown	Total Mitigated Volume (ac-ft)	Source of infiltration rate data	Soil code (Used for NRCS only)	Notes
3C-4	Biofiltration	0.47	0.10	1.56	0.1	0.0	1.0	0.1	NRCS	0	
3C-5	Flood Control	15.11	0.35	200.62	10.6	0.0	1.0	10.6	NRCS	142	
3D-1	Flood Control	6.17	0.35	54.91	4.3	0.0	1.0	4.3	NRCS	169	
3D-2	Flood Control	5.83	0.35	40.50	4.0	0.0	1.0	4.0	GMU sept 2017 testing	169	FOS=5.5
3D-3	Flood Control	6.37	0.60	44.70	7.6	0.0	1.0	7.6	NRCS	191	
3D-4	PreTreatment/Forebay	0	0.00	0.00	0.0	0.0	1.0	0.0	NRCS	0	
3D-5	Infiltration	2.52	1.75	18.00	8.8	0.0	1.0	8.82	NRCS	146	
3D-6	Biofiltration	0.05	0.10	0.13	0.0	0.0	1.0	0.0	0	169	
4E-1	Flood Control	3.28	0.60	28.65	3.9	0.0	1.0	3.9	NRCS	198	
4E-2	Infiltration	6.64	0.35	31.50	4.6	0.0	1.0	4.6	NRCS	198	
4F-1	Flood Control	3.73	0.60	19.60	4.5	0.0	1.0	4.5	NRCS	146	
4F-2	Infiltration	4.69	0.35	13.88	3.3	0.0	1.0	3.3	NRCS	191	
3G-1	Flood Control	5.28	0.60	24.60	6.3	0.0	1.0	6.3	NRCS	146	FOS=5.5
3G-1 INF	Infiltration	0.73	3.49	0.50	5.1	0.0	1.0	5.1	GMU sept 2017 testing	146	FOS=5.5

TOTAL - CURRENT PLAN

SJC (Gobernadora not included)	106.3	ac-ft
Gobernadora	16.4	ac-ft

August required volumes:		
San Juan	47.0	ac-ft
Gobernadora	9.8	ac-ft

	2-YR		
	Gobernadora (ac-ft)	San Juan Creek (ac-ft)	Total (ac-ft)
Existing	9.7	26.1	35.8
Proposed (Unmitigated)	19.5	73.1	92.7
		Required volume mitigation (ac-ft)	56.9
Volume Mitigated	16.4	106.3	122.7
		Required volume - mitigated volume (ac-ft)	-65.8

Volume Mitigation 5-yr

Basin	Basin type	Invert (ac)	Design Infiltration rate (in/hr)	Water vol (ac-ft)	Volume infiltrated (ac-ft/day)	Sump vol (1ft deep for hydromod, = water vol for WQ, none for flood	Days drawdown	Total Mitigated Volume (ac-ft)	Source of infiltration rate data	Soil code (Used for NRCS only)	Notes
3A-1	Biofiltration	0.75	0.10	1.78	0.2	0.0	1.0	0.2	Design Infiltration Rate and Worksheet	131	
3A-2	PreTreatment/Forebay	1.11	0.00	6.63	0.0	0.0	1.0	0.0	0	135	NRCS infiltration rates look very low - assumed 0 to be conservative.
3A-3	Infiltration	0.36	0.73	1.54	0.5	0.0	1.0	0.5	Design Infiltration Rate and Worksheet	139	
3A-4	Infiltration	2.21	0.73	9.56	3.2	0.0	1.0	3.2	Design Infiltration Rate and Worksheet	135	
3A-5	Biofiltration	1.58	0.10	4.06	0.3	0.0	1.0	0.3	Design Infiltration Rate and Worksheet	142	
3A-6	Biofiltration	0.99	0.10	2.53	0.2	0.0	1.0	0.2	Design Infiltration Rate and Worksheet	142	
3A-7	Biofiltration	1.08	0.10	2.79	0.2	0.0	1.0	0.2	Design Infiltration Rate and Worksheet	135	
3A-8	Biofiltration	0.38	0.10	1.05	0.1	0.0	1.0	0.1	Design Infiltration Rate and Worksheet	135	
3A-9	Hydromodification	4.23	0.35	36.03	3.0	0.0	2.0	6.0	NRCS	135	
3A-10	Hydromodification	2.05	0.35	11.47	1.4	0.0	2.0	2.9	NRCS	135	
3A-11	Hydromodification	1.98	0.35	11.11	1.4	0.0	2.0	2.8	NRCS	135	
3A-12	Biofiltration	0.08	0.10	0.21	0.02	0.0	1.0	0.02	Design Infiltration Rate and Worksheet	142	
3A-13	Potential Spreading	3	0.00	0.00	0.0	0.0	1.0	0.0	NRCS	142	
3B-1	Flood Control	0.99	0.35	12.60	0.7	0.0	1.0	0.7	NRCS	142	
3B-2	PreTreatment/Forebay	0.3	0.00	5.10	0.0	0.0	1.0	0.0	NRCS	142	
3B-3	Advanced Treatment	1.87	0.00	4.84	0.0	0.0	1.0	0.0	NRCS	179	Adv. Treatment is assumed to mitigate the DCV volume. No infiltration due to permanent pond beneath.
3B-4	Flood Control	1.34	0.35	55.00	0.9	0.0	1.0	0.9	NRCS	142	
3B-5	Infiltration	0.39	0.53	3.44	0.4	0.0	1.0	0.4	NRCS	146	
3B-6	Advanced Treatment	0.21	0.00	0.57	0.0	0.0	1.0	0.0	NRCS	141	Adv. Treatment is assumed to mitigate the DCV volume. No infiltration due to permanent pond beneath.
3C-1	Flood Control	10.53	0.60	84.24	12.6	0.0	1.0	12.6	NRCS	146	
3C-1 Lake	Advanced Treatment	4.17	0.00	6.26	0.0	0.0	1.0	0.0	NRCS	191	
3C-2	Infiltration	4.5	3.99	72.40	35.9	0.0	1.0	35.9	NRCS	146	
3C-3	Flood Control	20.83	0.60	119.59	25.0	0.0	1.0	25.0	NRCS	191	

Basin	Basin type	Invert (ac)	Design Infiltration rate (in/hr)	Water vol (ac-ft)	Volume infiltrated (ac-ft/day)	Sump vol (1ft deep for hydromod, = water vol for WQ, none for flood	Days drawdown	Total Mitigated Volume (ac-ft)	Source of infiltration rate data	Soil code (Used for NRCS only)	Notes
3C-4	Biofiltration	0.47	0.10	1.56	0.1	0.0	1.0	0.1	NRCS	0	
3C-5	Flood Control	15.11	0.35	200.62	10.6	0.0	1.0	10.6	NRCS	142	
3D-1	Flood Control	6.17	0.35	54.91	4.3	0.0	1.0	4.3	NRCS	169	
3D-2	Flood Control	5.83	0.35	40.50	4.0	0.0	1.0	4.0	GMU sept 2017 testing	169	FOS=5.5
3D-3	Flood Control	6.37	0.60	44.70	7.6	0.0	1.0	7.6	NRCS	191	
3D-4	PreTreatment/Forebay	0	0.00	0.00	0.0	0.0	1.0	0.0	NRCS	0	
3D-5	Infiltration	2.52	1.75	18.00	8.8	0.0	1.0	8.82	NRCS	146	
3D-6	Biofiltration	0.05	0.10	0.13	0.0	0.0	1.0	0.0	0	169	
4E-1	Flood Control	3.28	0.60	28.65	3.9	0.0	1.0	3.9	NRCS	198	
4E-2	Infiltration	6.64	0.35	31.50	4.6	0.0	1.0	4.6	NRCS	198	
4F-1	Flood Control	3.73	0.60	19.60	4.5	0.0	1.0	4.5	NRCS	146	
4F-2	Infiltration	4.69	0.35	13.88	3.3	0.0	1.0	3.3	NRCS	191	
3G-1	Flood Control	5.28	0.60	24.60	6.3	0.0	1.0	6.3	NRCS	146	FOS=5.5
3G-1 INF	Infiltration	0.73	3.49	0.50	5.1	0.0	1.0	5.1	GMU sept 2017 testing	146	FOS=5.5

TOTAL - CURRENT PLAN

SJC (Gobernadora not included)	106.3	ac-ft
Gobernadora	16.4	ac-ft

August required volumes:		
San Juan	62.3	ac-ft
Gobernadora	8.4	ac-ft

	5-YR		
	Gobernadora (ac-ft)	San Juan Creek (ac-ft)	Total (ac-ft)
Existing	24.5	64.9	89.4
Proposed (Unmitigated)	32.9	127.2	160.1
Required volume mitigation (ac-ft)			70.7
Volume Mitigated	16.4	106.3	122.7
Required volume - mitigated volume (ac-ft)			-51.9

Volume Mitigation 10-yr

Basin	Basin type	Invert (ac)	Design Infiltration rate (in/hr)	Water vol (ac-ft)	Volume infiltrated (ac-ft/day)	Sump vol (1ft deep for hydromod, = water vol for WQ, none for flood	Days drawdown	Total Mitigated Volume (ac-ft)	Source of infiltration rate data	Soil code (Used for NRCS only)	Notes
3A-1	Biofiltration	0.75	0.10	1.78	0.2	0.0	1.0	0.2	Design Infiltration Rate and Worksheet	131	
3A-2	PreTreatment/Forebay	1.11	0.00	6.63	0.0	0.0	1.0	0.0	0	135	NRCS infiltration rates look very low - assumed 0 to be conservative.
3A-3	Infiltration	0.36	0.73	1.54	0.5	0.0	1.0	0.5	Design Infiltration Rate and Worksheet	139	
3A-4	Infiltration	2.21	0.73	9.56	3.2	0.0	1.0	3.2	Design Infiltration Rate and Worksheet	135	
3A-5	Biofiltration	1.58	0.10	4.06	0.3	0.0	1.0	0.3	Design Infiltration Rate and Worksheet	142	
3A-6	Biofiltration	0.99	0.10	2.53	0.2	0.0	1.0	0.2	Design Infiltration Rate and Worksheet	142	
3A-7	Biofiltration	1.08	0.10	2.79	0.2	0.0	1.0	0.2	Design Infiltration Rate and Worksheet	135	
3A-8	Biofiltration	0.38	0.10	1.05	0.1	0.0	1.0	0.1	Design Infiltration Rate and Worksheet	135	
3A-9	Hydromodification	4.23	0.35	36.03	3.0	0.0	2.0	6.0	NRCS	135	
3A-10	Hydromodification	2.05	0.35	11.47	1.4	0.0	2.0	2.9	NRCS	135	
3A-11	Hydromodification	1.98	0.35	11.11	1.4	0.0	2.0	2.8	NRCS	135	
3A-12	Biofiltration	0.08	0.10	0.21	0.02	0.0	1.0	0.02	Design Infiltration Rate and Worksheet	142	
3A-13	Potential Spreading	3	0.00	0.00	0.0	0.0	1.0	0.0	NRCS	142	
3B-1	Flood Control	0.99	0.35	12.60	0.7	0.0	1.0	0.7	NRCS	142	
3B-2	PreTreatment/Forebay	0.3	0.00	5.10	0.0	0.0	1.0	0.0	NRCS	142	
3B-3	Advanced Treatment	1.87	0.00	4.84	0.0	0.0	1.0	0.0	NRCS	179	Adv. Treatment is assumed to mitigate the DCV volume. No infiltration due to permanent pond beneath.
3B-4	Flood Control	1.34	0.35	55.00	0.9	0.0	1.0	0.9	NRCS	142	
3B-5	Infiltration	0.39	0.53	3.44	0.4	0.0	1.0	0.4	NRCS	146	
3B-6	Advanced Treatment	0.21	0.00	0.57	0.0	0.0	1.0	0.0	NRCS	141	Adv. Treatment is assumed to mitigate the DCV volume. No infiltration due to permanent pond beneath.
3C-1	Flood Control	10.53	0.60	84.24	12.6	0.0	1.0	12.6	NRCS	146	
3C-1 Lake	Advanced Treatment	4.17	0.00	6.26	0.0	0.0	1.0	0.0	NRCS	191	
3C-2	Infiltration	4.5	3.99	72.40	35.9	0.0	1.0	35.9	NRCS	146	
3C-3	Flood Control	20.83	0.60	119.59	25.0	0.0	1.0	25.0	NRCS	191	

Basin	Basin type	Invert (ac)	Design Infiltration rate (in/hr)	Water vol (ac-ft)	Volume infiltrated (ac-ft/day)	Sump vol (1ft deep for hydromod, = water vol for WQ, none for flood	Days drawdown	Total Mitigated Volume (ac-ft)	Source of infiltration rate data	Soil code (Used for NRCS only)	Notes
3C-4	Biofiltration	0.47	0.10	1.56	0.1	0.0	1.0	0.1	NRCS	0	
3C-5	Flood Control	15.11	0.35	200.62	10.6	0.0	1.0	10.6	NRCS	142	
3D-1	Flood Control	6.17	0.35	54.91	4.3	0.0	1.0	4.3	NRCS	169	
3D-2	Flood Control	5.83	0.35	40.50	4.0	0.0	1.0	4.0	GMU sept 2017 testing	169	FOS=5.5
3D-3	Flood Control	6.37	0.60	44.70	7.6	0.0	1.0	7.6	NRCS	191	
3D-4	PreTreatment/Forebay	0	0.00	0.00	0.0	0.0	1.0	0.0	NRCS	0	
3D-5	Infiltration	2.52	1.75	18.00	8.8	0.0	1.0	8.82	NRCS	146	
3D-6	Biofiltration	0.05	0.10	0.13	0.0	0.0	1.0	0.0	0	169	
4E-1	Flood Control	3.28	0.60	28.65	3.9	0.0	1.0	3.9	NRCS	198	
4E-2	Infiltration	6.64	0.35	31.50	4.6	0.0	1.0	4.6	NRCS	198	
4F-1	Flood Control	3.73	0.60	19.60	4.5	0.0	1.0	4.5	NRCS	146	
4F-2	Infiltration	4.69	0.35	13.88	3.3	0.0	1.0	3.3	NRCS	191	
3G-1	Flood Control	5.28	0.60	24.60	6.3	0.0	1.0	6.3	NRCS	146	FOS=5.5
3G-1 INF	Infiltration	0.73	3.49	0.50	5.1	0.0	1.0	5.1	GMU sept 2017 testing	146	FOS=5.5

TOTAL - CURRENT PLAN

SJC (Gobernadora not included)	106.3	ac-ft
Gobernadora	16.4	ac-ft

August required volumes:		
San Juan	76.3	ac-ft
Gobernadora	4.5	ac-ft

	10-YR		
	Gobernadora (ac-ft)	San Juan Creek (ac-ft)	Total (ac-ft)
Existing	48.8	139.4	188.2
Proposed (Unmitigated)	53.4	215.7	269.0
Required volume mitigation (ac-ft)			80.8
Volume Mitigated	16.4	106.3	122.7
Required volume - mitigated volume (ac-ft)			-41.8

Volume Mitigation 25-yr

Basin	Basin type	Invert (ac)	Design Infiltration rate (in/hr)	Water vol (ac-ft)	Volume infiltrated (ac-ft/day)	Sump vol (1ft deep for hydromod, = water vol for WQ, none for flood	Days drawdown	Total Mitigated Volume (ac-ft)	Source of infiltration rate data	Soil code (Used for NRCS only)	Notes
3A-1	Biofiltration	0.75	0.10	1.78	0.2	0.0	1.0	0.2	Design Infiltration Rate and Worksheet	131	
3A-2	PreTreatment/Forebay	1.11	0.00	6.63	0.0	0.0	1.0	0.0	0	135	NRCS infiltration rates look very low - assumed 0 to be conservative.
3A-3	Infiltration	0.36	0.73	1.54	0.5	0.0	1.0	0.5	Design Infiltration Rate and Worksheet	139	
3A-4	Infiltration	2.21	0.73	9.56	3.2	0.0	1.0	3.2	Design Infiltration Rate and Worksheet	135	
3A-5	Biofiltration	1.58	0.10	4.06	0.3	0.0	1.0	0.3	Design Infiltration Rate and Worksheet	142	
3A-6	Biofiltration	0.99	0.10	2.53	0.2	0.0	1.0	0.2	Design Infiltration Rate and Worksheet	142	
3A-7	Biofiltration	1.08	0.10	2.79	0.2	0.0	1.0	0.2	Design Infiltration Rate and Worksheet	135	
3A-8	Biofiltration	0.38	0.10	1.05	0.1	0.0	1.0	0.1	Design Infiltration Rate and Worksheet	135	
3A-9	Hydromodification	4.23	0.35	36.03	3.0	0.0	2.0	6.0	NRCS	135	
3A-10	Hydromodification	2.05	0.35	11.47	1.4	0.0	2.0	2.9	NRCS	135	
3A-11	Hydromodification	1.98	0.35	11.11	1.4	0.0	2.0	2.8	NRCS	135	
3A-12	Biofiltration	0.08	0.10	0.21	0.02	0.0	1.0	0.02	Design Infiltration Rate and Worksheet	142	
3A-13	Potential Spreading	3	0.00	0.00	0.0	0.0	1.0	0.0	NRCS	142	
3B-1	Flood Control	0.99	0.35	12.60	0.7	0.0	1.0	0.7	NRCS	142	
3B-2	PreTreatment/Forebay	0.3	0.00	5.10	0.0	0.0	1.0	0.0	NRCS	142	
3B-3	Advanced Treatment	1.87	0.00	4.84	0.0	0.0	1.0	0.0	NRCS	179	Adv. Treatment is assumed to mitigate the DCV volume. No infiltration due to permanent pond beneath.
3B-4	Flood Control	1.34	0.35	55.00	0.9	0.0	1.0	0.9	NRCS	142	
3B-5	Infiltration	0.39	0.53	3.44	0.4	0.0	1.0	0.4	NRCS	146	
3B-6	Advanced Treatment	0.21	0.00	0.57	0.0	0.0	1.0	0.0	NRCS	141	Adv. Treatment is assumed to mitigate the DCV volume. No infiltration due to permanent pond beneath.
3C-1	Flood Control	10.53	0.60	84.24	12.6	0.0	1.0	12.6	NRCS	146	
3C-1 Lake	Advanced Treatment	4.17	0.00	6.26	0.0	0.0	1.0	0.0	NRCS	191	
3C-2	Infiltration	4.5	3.99	72.40	35.9	0.0	1.0	35.9	NRCS	146	
3C-3	Flood Control	20.83	0.60	119.59	25.0	0.0	1.0	25.0	NRCS	191	

Basin	Basin type	Invert (ac)	Design Infiltration rate (in/hr)	Water vol (ac-ft)	Volume infiltrated (ac-ft/day)	Sump vol (1ft deep for hydromod, = water vol for WQ, none for flood	Days drawdown	Total Mitigated Volume (ac-ft)	Source of infiltration rate data	Soil code (Used for NRCS only)	Notes
3C-4	Biofiltration	0.47	0.10	1.56	0.1	0.0	1.0	0.1	NRCS	0	
3C-5	Flood Control	15.11	0.35	200.62	10.6	0.0	1.0	10.6	NRCS	142	
3D-1	Flood Control	6.17	0.35	54.91	4.3	0.0	1.0	4.3	NRCS	169	
3D-2	Flood Control	5.83	0.35	40.50	4.0	0.0	1.0	4.0	GMU sept 2017 testing	169	FOS=5.5
3D-3	Flood Control	6.37	0.60	44.70	7.6	0.0	1.0	7.6	NRCS	191	
3D-4	PreTreatment/Forebay	0	0.00	0.00	0.0	0.0	1.0	0.0	NRCS	0	
3D-5	Infiltration	2.52	1.75	18.00	8.8	0.0	1.0	8.82	NRCS	146	
3D-6	Biofiltration	0.05	0.10	0.13	0.0	0.0	1.0	0.0	0	169	
4E-1	Flood Control	3.28	0.60	28.65	3.9	0.0	1.0	3.9	NRCS	198	
4E-2	Infiltration	6.64	0.35	31.50	4.6	0.0	1.0	4.6	NRCS	198	
4F-1	Flood Control	3.73	0.60	19.60	4.5	0.0	1.0	4.5	NRCS	146	
4F-2	Infiltration	4.69	0.35	13.88	3.3	0.0	1.0	3.3	NRCS	191	
3G-1	Flood Control	5.28	0.60	24.60	6.3	0.0	1.0	6.3	NRCS	146	FOS=5.5
3G-1 INF	Infiltration	0.73	3.49	0.50	5.1	0.0	1.0	5.1	GMU sept 2017 testing	146	FOS=5.5

TOTAL - CURRENT PLAN

SJC (Gobernadora not included)	138.9	ac-ft
Gobernadora	16.4	ac-ft

August required volumes:		
San Juan	88.9	ac-ft
Gobernadora	-0.4	ac-ft

	25-YR		
	Gobernadora (ac-ft)	San Juan Creek (ac-ft)	Total (ac-ft)
Existing	67.3	191.4	258.7
Proposed (Unmitigated)	66.9	280.3	347.2
Required volume mitigation (ac-ft)			88.5
Volume Mitigated	16.4	138.9	155.3
Required volume - mitigated volume (ac-ft)			-66.8

Volume Mitigation 50-yr

Basin	Basin type	Invert (ac)	Design Infiltration rate (in/hr)	Water vol (ac-ft)	Volume infiltrated (ac-ft/day)	Sump vol (1ft deep for hydromod, = water vol for WQ, none for flood	Days drawdown	Total Mitigated Volume (ac-ft)	Source of infiltration rate data	Soil code (Used for NRCS only)	Notes
3A-1	Biofiltration	0.75	0.10	1.78	0.2	0.0	1.0	0.2	Design Infiltration Rate and Worksheet	131	
3A-2	PreTreatment/Foreba y	1.11	0.00	6.63	0.0	0.0	1.0	0.0	0	135	NRCS infiltration rates look very low - assumed 0 to be conservative.
3A-3	Infiltration	0.36	0.73	1.54	0.5	0.0	1.0	0.5	Design Infiltration Rate and Worksheet	139	
3A-4	Infiltration	2.21	0.73	9.56	3.2	0.0	1.0	3.2	Design Infiltration Rate and Worksheet	135	
3A-5	Biofiltration	1.58	0.10	4.06	0.3	0.0	1.0	0.3	Design Infiltration Rate and Worksheet	142	
3A-6	Biofiltration	0.99	0.10	2.53	0.2	0.0	1.0	0.2	Design Infiltration Rate and Worksheet	142	
3A-7	Biofiltration	1.08	0.10	2.79	0.2	0.0	1.0	0.2	Design Infiltration Rate and Worksheet	135	
3A-8	Biofiltration	0.38	0.10	1.05	0.1	0.0	1.0	0.1	Design Infiltration Rate and Worksheet	135	
3A-9	Hydromodification	4.23	0.35	36.03	3.0	0.0	2.0	6.0	NRCS	135	
3A-10	Hydromodification	2.05	0.35	11.47	1.4	0.0	2.0	2.9	NRCS	135	
3A-11	Hydromodification	1.98	0.35	11.11	1.4	0.0	2.0	2.8	NRCS	135	
3A-12	Biofiltration	0.08	0.10	0.21	0.02	0.0	1.0	0.02	Design Infiltration Rate and Worksheet	142	
3A-13	Potential Spreading	3	0.00	0.00	0.0	0.0	1.0	0.0	NRCS	142	
3B-1	Flood Control	0.99	0.35	12.60	0.7	0.0	1.0	0.7	NRCS	142	
3B-2	PreTreatment/Foreba y	0.3	0.00	5.10	0.0	0.0	1.0	0.0	NRCS	142	
3B-3	Advanced Treatment	1.87	0.00	4.84	0.0	0.0	1.0	0.0	NRCS	179	Adv. Treatment is assumed to mitigate the DCV volume. No infiltration due to permanent pond beneath.
3B-4	Flood Control	1.34	0.35	55.00	0.9	0.0	1.0	0.9	NRCS	142	
3B-5	Infiltration	0.39	0.53	3.44	0.4	0.0	1.0	0.4	NRCS	146	
3B-6	Advanced Treatment	0.21	0.00	0.57	0.0	0.0	1.0	0.0	NRCS	141	Adv. Treatment is assumed to mitigate the DCV volume. No infiltration due to permanent pond beneath.
3C-1	Flood Control	10.53	0.60	84.24	12.6	0.0	1.0	12.6	NRCS	146	
3C-1 Lake	Advanced Treatment	4.17	0.00	6.26	0.0	0.0	1.0	0.0	NRCS	191	
3C-2	Infiltration	4.5	3.99	72.40	35.9	0.0	1.0	35.9	NRCS	146	
3C-3	Flood Control	20.83	0.60	119.59	25.0	0.0	1.0	25.0	NRCS	191	

Basin	Basin type	Invert (ac)	Design Infiltration rate (in/hr)	Water vol (ac-ft)	Volume infiltrated (ac-ft/day)	Sump vol (1ft deep for hydromod, = water vol for WQ, none for flood	Days drawdown	Total Mitigated Volume (ac-ft)	Source of infiltration rate data	Soil code (Used for NRCS only)	Notes
3C-4	Biofiltration	0.47	0.10	1.56	0.1	0.0	1.0	0.1	NRCS	0	
3C-5	Flood Control	15.11	0.35	200.62	10.6	0.0	1.0	10.6	NRCS	142	
3D-1	Flood Control	6.17	0.35	54.91	4.3	0.0	1.0	4.3	NRCS	169	
3D-2	Flood Control	5.83	0.35	40.50	4.0	0.0	1.0	4.0	GMU sept 2017 testing	169	FOS=5.5
3D-3	Flood Control	6.37	0.60	44.70	7.6	0.0	1.0	7.6	NRCS	191	
3D-4	PreTreatment/Forebay	0	0.00	0.00	0.0	0.0	1.0	0.0	NRCS	0	
3D-5	Infiltration	2.52	1.75	18.00	8.8	0.0	1.0	8.8	NRCS	146	
3D-6	Biofiltration	0.05	0.10	0.13	0.0	0.0	1.0	0.0	0	169	
4E-1	Flood Control	3.28	0.60	28.65	3.9	0.0	1.0	3.9	NRCS	198	
4E-2	Infiltration	6.64	0.35	31.50	4.6	0.0	1.0	4.6	NRCS	198	
4F-1	Flood Control	3.73	0.60	19.60	4.5	0.0	1.0	4.5	NRCS	146	
4F-2	Infiltration	4.69	0.35	13.88	3.3	0.0	1.0	3.3	NRCS	191	
3G-1	Flood Control	5.28	0.60	24.60	6.3	0.0	1.0	6.3	NRCS	146	FOS=5.5
3G-1 INF	Infiltration	0.73	3.49	0.50	5.1	0.0	1.0	5.1	GMU sept 2017 testing	146	FOS=5.5

TOTAL - CURRENT PLAN

SJC (Gobernadora not included)	138.9	ac-ft
Gobernadora	16.4	ac-ft

August required volumes:		
San Juan	102.9	ac-ft
Gobernadora	-7.2	ac-ft

	50-YR		
	Gobernadora (ac-ft)	San Juan Creek (ac-ft)	Total (ac-ft)
Existing	80.5	238.8	319.3
Proposed (Unmitigated)	77.7	324.8	402.5
		Required volume mitigation (ac-ft)	83.2
Volume Mitigated	16.4	138.9	155.3
		Required volume - mitigated volume (ac-ft)	-72.1

Volume Mitigation 100-yr

Basin	Basin type	Invert (ac)	Design Infiltration rate (in/hr)	Water vol (ac-ft)	Volume infiltrated (ac-ft/day)	Sump vol (1ft deep for hydromod, = water vol for WQ, none for flood	Days drawdown	Total Mitigated Volume (ac-ft)	Source of infiltration rate data	Soil code (Used for NRCS only)	Notes
3A-1	Biofiltration	0.75	0.10	1.78	0.2		1.0	0.2	Design Infiltration Rate and Worksheet	131	
3A-2	PreTreatment/Forebay	1.11	0.00	6.63	0.0		1.0	0.0		135	NRCS infiltration rates look very low - assumed 0 to be conservative.
3A-3	Infiltration	0.36	0.73	1.54	0.5		1.0	0.5	Design Infiltration Rate and Worksheet	139	
3A-4	Infiltration	2.21	0.73	9.56	3.2		1.0	3.2	Design Infiltration Rate and Worksheet	135	
3A-5	Biofiltration	1.58	0.10	4.06	0.3		1.0	0.3	Design Infiltration Rate and Worksheet	142	
3A-6	Biofiltration	0.99	0.10	2.53	0.2		1.0	0.2	Design Infiltration Rate and Worksheet	142	
3A-7	Biofiltration	1.08	0.10	2.79	0.2		1.0	0.2	Design Infiltration Rate and Worksheet	135	
3A-8	Biofiltration	0.38	0.10	1.05	0.1		1.0	0.1	Design Infiltration Rate and Worksheet	135	
3A-9	Hydromodification	4.23	0.35	36.03	3.0		2.0	6.0	NRCS	135	
3A-10	Hydromodification	2.05	0.35	11.47	1.4		2.0	2.9	NRCS	135	
3A-11	Hydromodification	1.98	0.35	11.11	1.4		2.0	2.8	NRCS	135	
3A-12	Biofiltration	0.08	0.10	0.21	0.02		1.0	0.02	Design Infiltration Rate and Worksheet	142	
3A-13	Potential Spreading	3	0.00	0.00	0.0		1.0	0.0	NRCS	142	
3B-1	Flood Control	0.99	0.35	12.60	0.7		1.0	0.7	NRCS	142	
3B-2	PreTreatment/Forebay	0.3	0.00	5.10	0.0		1.0	0.0	NRCS	142	
3B-3	Advanced Treatment	1.87	0.00	4.84	0.0		1.0	0.0	NRCS	179	Adv. Treatment is assumed to mitigate the DCV volume. No infiltration due to permanent pond beneath.
3B-4	Flood Control	1.34	0.35	55.00	0.9		1.0	0.9	NRCS	142	
3B-5	Infiltration	0.39	0.53	3.44	0.4		1.0	0.4	NRCS	146	
3B-6	Advanced Treatment	0.21	0.00	0.57	0.0		1.0	0.0	NRCS	141	Adv. Treatment is assumed to mitigate the DCV volume. No infiltration due to permanent pond beneath.
3C-1	Flood Control	10.53	0.60	84.24	12.6		1.0	12.6	NRCS	146	
3C-1 Lake	Advanced Treatment	4.17	0.00	6.26	0.0		1.0	0.0	NRCS	191	
3C-2	Infiltration	4.5	3.99	72.40	35.9		1.0	35.9	NRCS	146	
3C-3	Flood Control	20.83	0.60	119.59	25.0		1.0	25.0	NRCS	191	
3C-4	Biofiltration	0.47	0.10	1.56	0.1		1.0	0.1	NRCS	0	

Basin	Basin type	Invert (ac)	Design Infiltration rate (in/hr)	Water vol (ac-ft)	Volume infiltrated (ac-ft/day)	Sump vol (1ft deep for hydromod, = water vol for WQ, none for flood	Days drawdown	Total Mitigated Volume (ac-ft)	Source of infiltration rate data	Soil code (Used for NRCS only)	Notes
3C-5	Flood Control	15.11	0.35	200.62	10.6		1.0	10.6	NRCS	142	
3D-1	Flood Control	6.17	0.35	54.91	4.3		1.0	4.3	NRCS	169	
3D-2	Flood Control	5.83	0.35	40.50	4.0		1.0	4.0	GMU sept 2017 testing	169	FOS=5.5
3D-3	Flood Control	6.37	0.60	44.70	7.6		1.0	7.6	NRCS	191	
3D-4	PreTreatment/Forebay	0	0.00	0.00	0.0		1.0	0.0	NRCS	0	
3D-5	Infiltration	2.52	1.75	18.00	8.8		1.0	8.82	NRCS	146	
3D-6	Biofiltration	0.05	0.10	0.13	0.0		1.0	0.0		169	
4E-1	Flood Control	3.28	0.60	28.65	3.9		1.0	3.9	NRCS	198	
4E-2	Infiltration	6.64	0.35	31.50	4.6		1.0	4.6	NRCS	198	
4F-1	Flood Control	3.73	0.60	19.60	4.5		1.0	4.5	NRCS	146	
4F-2	Infiltration	4.69	0.35	13.88	3.3		1.0	3.3	NRCS	191	
3G-1	Flood Control	5.28	0.60	24.60	6.3		1.0	6.3	NRCS	146	FOS=5.5
3G-1 INF	Infiltration	0.73	3.49	0.50	5.1		1.0	5.1	GMU sept 2017 testing	146	FOS=5.5

TOTAL - CURRENT PLAN

SJC (Gobernadora not included)	138.9	ac-ft
Gobernadora	16.4	ac-ft

August required volumes:

San Juan	102.9	ac-ft
Gobernadora	-7.2	ac-ft

	100-YR		
	Gobernadora (ac-ft)	San Juan Creek (ac-ft)	Total (ac-ft)
Existing	93.5	259.8	353.3
Proposed (Unmitigated)	86.2	362.7	448.9
		Required volume mitigation (ac-ft)	95.6
Volume Mitigated	16.4	138.9	155.3
		Required volume - mitigated volume (ac-ft)	-59.7