RIO GRANDE CANALIZATION PROJECT
WATER BUDGET STUDY
Final Report

Appendix G5 - Water Budget Analysis Summary
Normal Single Pulse Hydrograph, Scenario S2
(Based on FLO-2D Model Results)

Table G5-1: RGCP Channel Water Budget Equation Analysis Segment 1 — Normal Single Pulse Hydrograph, Scenario S2 (Units = Acre-Feet)

	Segment 1 - Caballo Dam to Leasburg Dam (Upper Reach)													
	Qcus	Pc	Qcin	Qirf	Qeff	Qgwrf	Qcds	Qcs	Qfpr	ET	ET	Qda	Qdu	Δsic
Date	Upstream Channel Inflow, River Below Caballo Dam	Precipitation Flows in River Channel	In-channel Stormwater/ Ungaged Return Inflow	Irrigation Return Flow (none in Segment 1)	Treated Effluent Return Flow	Groundwater Return Flow	Downstream Channel Outflow, below Leasburg Cable	Channel Seepage	Floodplain Recharge	Open Water Channel Evaporation	Riparian Evapo-transpiration	Diversions Authorized (Percha, Arrey, & Leasburg)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
3/31/2012	0.0	0.1	0.0	0.0	1.0	28.8	0.0	0.0	6.3	0.0	33.7	0.0	0.0	-10.1
4/1/2012	991.7	0.1	0.0	0.0	1.0	28.8	0.0	65.7	6.3	3.0	33.7	0.0	0.0	912.9
4/2/2012	2975.2	0.7	0.0	0.0	1.0	28.8	0.0	324.2	6.3	10.4	33.7	0.0	0.0	2631.2
4/3/2012	2975.2	0.6	0.0	0.0	1.0	28.8	628.9	720.9	6.3	22.4	33.7	0.0	0.0	1593.4
4/4/2012	2975.2	0.8	0.0	0.0	1.0	28.8	2269.1	639.8	6.3	24.0	33.7	0.0	0.0	33.0
4/5/2012	2975.2	1.2	0.0	0.0	1.0	28.8	2371.2	521.1	6.3	24.0	33.7	0.0	0.0	49.9
4/6/2012	2975.2	0.7	0.0	0.0	1.0	28.8	2512.0	386.8	6.3	24.0	33.7	0.0	0.0	42.9
4/7/2012	2975.2	1.3	0.0	0.0	1.0	28.8	2674.9	259.3	6.3	24.0	33.7	0.0	0.0	8.2
4/8/2012	2975.2	0.6	0.0	0.0	1.0	28.8	2729.5	217.6	6.3	24.0	33.7	0.0	0.0	-5.4
4/9/2012	2975.2	0.1	0.0	0.0	1.0	28.8	2742.0	207.5	6.3	24.0	33.7	0.0	0.0	-8.4
4/10/2012	2975.2	0.2	0.0	0.0	1.0	28.8	2746.4	203.6	6.3	24.0	33.7	0.0	0.0	-8.8
4/11/2012	2975.2	1.3	0.0	0.0	1.0	28.8	2748.9	201.4	6.3	24.0	33.7	0.0	0.0	-7.9
4/12/2012	2975.2	1.7	0.0	0.0	1.0	28.8	2750.9	199.4	6.3	24.0	33.7	0.0	0.0	-7.5
4/13/2012	2975.2	0.1	0.0	0.0	1.0	28.8	2752.7	197.9	6.3	24.0	33.7	0.0	0.0	-9.5
4/14/2012	2380.2	0.3	362.2	0.0	1.0	28.8	2743.4	194.5	6.3	24.0	33.7	0.0	0.0	-229.4
4/15/2012	2380.2	1.0	5.2	0.0	1.0	28.8	2386.4	186.8	6.3	24.0	33.7	0.0	0.0	-221.0
4/16/2012	2380.2	0.4	0.0	0.0	1.0	28.8	2171.2	184.8	6.3	24.0	33.7	0.0	0.0	-9.6
4/17/2012	2380.2	2.6	0.0	0.0	1.0	28.8	2171.9	183.9	6.3	24.0	33.7	0.0	0.0	-7.2
4/18/2012	2380.2	0.3	0.0	0.0	1.0	28.8	2172.8	183.0	6.3	24.0	33.7	0.0	0.0	-9.5
4/19/2012	2380.2	0.3	0.0	0.0	1.0	28.8	2173.6	182.2	6.3	24.0	33.7	0.0	0.0	-9.6
4/20/2012	2380.2	0.9	0.0	0.0	1.0	28.8	2174.4	181.5	6.3	24.0	33.7	0.0	0.0	-9.0
4/21/2012	2380.2	0.1	0.0	0.0	1.0	28.8	2175.1	180.8	6.3	24.0	33.7	0.0	0.0	-9.8
4/22/2012	2380.2	0.3	0.0	0.0	1.0	28.8	2175.7	180.2	6.3	24.0	33.7	0.0	0.0	-9.6
4/23/2012	2380.2	2.6	0.0	0.0	1.0	28.8	2176.3	179.6	6.3	24.0	33.7	0.0	0.0	-7.4
4/24/2012	2380.2	1.0	0.0	0.0	1.0	28.8	2176.9	179.1	6.3	24.0	33.7	0.0	0.0	-9.0
4/25/2012	2380.2	0.2	0.0	0.0	1.0	28.8	2177.4	178.6	6.3	24.0	33.7	0.0	0.0	-9.9
4/26/2012	2380.2	1.9	0.0	0.0	1.0	28.8	2177.9	178.1	6.3	24.0	33.7	0.0	0.0	-8.1
4/27/2012	2380.2	1.5	0.0	0.0	1.0	28.8	2176.7	177.4	6.3	24.0	33.7	99.2	1.0	-106.8
4/28/2012	2380.2	0.8	0.0	0.0	1.0	28.8	2116.6	175.5	6.3	24.0	33.7	200.3	2.0	-147.7
4/29/2012	2380.2	1.2	0.0	0.0	1.0	28.8	2020.6	173.9	6.3	24.0	33.7	198.3	2.0	-47.7
4/30/2012	2380.2	1.5	0.0	0.0	1.0	28.8	1983.6	173.4	6.3	24.0	33.7	200.3	2.0	-11.9
5/1/2012	1983.5	0.4	193.7	0.0	1.0	28.8	1977.9	171.7	6.3	29.9	33.7	200.3	2.0	-214.4
5/2/2012	1983.5	1.2	48.8	0.0	1.0	28.8	1771.6	166.3	6.3	29.9	33.7	261.6	2.6	-208.8
5/3/2012	1983.5	2.5	0.0	0.0	1.0	28.8	1557.3	164.0	6.3	29.9	33.7	297.9	3.0	-76.3
5/4/2012	1983.5	1.4	0.0	0.0	1.0	28.8	1509.4	163.2	6.3	29.9	33.7	297.9	3.0	-28.7
5/5/2012	1983.5	1.0	0.0	0.0	1.0	28.8	1493.0	163.0	6.3	29.9	33.7	297.9	3.0	-12.5
5/6/2012	1983.5	0.8	0.0	0.0	1.0	28.8	1493.2	162.8	6.3	29.9	33.7	308.2	3.1	-23.1
5/7/2012	1983.5	1.6	0.0	0.0	1.0	28.8	1488.3	162.3	6.3	29.9	33.7	308.2	3.1	-16.9
5/8/2012	1983.5	0.3	0.0	0.0	1.0	28.8	1484.8	162.3	6.3	29.9	33.7	144.8	1.4	150.3
5/9/2012	1983.5	0.9	0.0	0.0	1.0	28.8	1571.2	164.6	6.3	29.9	33.7	0.0	0.0	208.4
5/10/2012	1983.5	0.3	0.0	0.0	1.0	28.8	1724.2	166.9	6.3	29.9	33.7	0.0	0.0	52.6
5/11/2012	1983.5	1.1	0.0	0.0	1.0	28.8	1786.4	167.1	6.3	29.9	33.7	0.0	0.0	-9.1
5/12/2012	1983.5	0.4	0.0	0.0	1.0	28.8	1786.7	166.9	6.3	29.9	33.7	0.0	0.0	-9.8
5/13/2012	1983.5	0.7	0.0	0.0	1.0	28.8	1786.8	166.8	6.3	29.9	33.7	0.0	0.0	-9.6
5/14/2012	1983.5	1.4	0.0	0.0	1.0	28.8	1786.9	166.7	6.3	29.9	33.7	0.0	0.0	-8.8
5/15/2012	1983.5	0.6	0.0	0.0	1.0	28.8	1787.1	166.5	6.3	29.9	33.7	0.0	0.0	-9.6
5/16/2012	1983.5	1.6	0.0	0.0	1.0	28.8	1786.2	165.5	6.3	29.9	33.7	152.7	1.5	-160.9
5/17/2012	1983.5	1.8	18.0	0.0	1.0	28.8	1703.0	162.4	6.3	29.9	33.7	299.5	3.0	-204.7
5/18/2012	1983.5	2.6	0.0	0.0	1.0	28.8	1561.6	160.0	6.3	29.9	33.7	295.3	3.0	-73.8
5/19/2012	1983.5	0.7	0.0	0.0	1.0	28.8	1496.9	159.5	6.3	29.9	33.7	295.5	3.0	-10.8
5/20/2012	1983.5	1.1	0.0	0.0	1.0	28.8	1498.7	159.4	6.3	29.9	33.7	295.5	3.0	-12.0

Table G5-1: RGCP Channel Water Budget Equation Analysis Segment 1 — Normal Single Pulse Hydrograph, Scenario S2 (Units = Acre-Feet)

	Segment 1 - Caballo Dam to Leasburg Dam (Upper Reach)													
	Qcus	Pc	Qcin	Qirf	Qeff	Qgwrf	Qcds	Qcs	Qfpr	ET	ET	Qda	Qdu	Δsic
Date	Upstream Channel Inflow, River Below Caballo Dam	Precipitation Flows in River Channel	In-channel Stormwater/ Ungaged Return Inflow	Irrigation Return Flow (none in Segment 1)	Treated Effluent Return Flow	Groundwater Return Flow	Downstream Channel Outflow, below Leasburg Cable	Channel Seepage	Floodplain Recharge	Open Water Channel Evaporation	Riparian Evapo-transpiration	Diversions Authorized (Percha, Arrey, & Leasburg)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
5/21/2012	1983.5	0.5	0.0	0.0	1.0	28.8	1498.9	159.3	6.3	29.9	33.7	291.6	2.9	-8.8
5/22/2012	1983.5	1.5	0.0	0.0	1.0	28.8	1500.3	159.2	6.3	29.9	33.7	378.8	3.8	-97.2
5/23/2012	1983.5	1.7	0.0	0.0	1.0	28.8	1457.9	158.5	6.3	29.9	33.7	418.5	4.2	-94.0
5/24/2012	1983.5	1.6	0.0	0.0	1.0	28.8	1396.8	157.6	6.3	29.9	33.7	432.4	4.3	-46.1
5/25/2012	1983.5	2.1	0.0	0.0	1.0	28.8	1370.9	157.4	6.3	29.9	33.7	432.4	4.3	-19.5
5/26/2012	1983.5	0.5	0.0	0.0	1.0	28.8	1364.1	157.1	6.3	29.9	33.7	432.4	4.3	-14.0
5/27/2012	1983.5	3.0	0.0	0.0	1.0	28.8	1364.2	157.2	6.3	29.9	33.7	432.4	4.3	-11.7
5/28/2012	1983.5	1.8	0.0	0.0	1.0	28.8	1364.3	156.8	6.3	29.9	33.7	432.4	4.3	-12.6
5/29/2012	1983.5	0.8	0.0	0.0	1.0	28.8	1364.4	156.9	6.3	29.9	33.7	442.3	4.4	-23.9
5/30/2012	1983.5	1.1	0.0	0.0	1.0	28.8	1359.7	156.3	6.3	29.9	33.7	442.3	4.4	-18.2
5/31/2012	1983.5	0.8	0.0	0.0	1.0	28.8	1355.3	156.5	6.3	29.9	33.7	380.8	3.8	47.8
6/1/2012	1983.5	1.3	0.0	0.0	1.0	28.8	1383.5	157.0	6.3	35.3	33.7	380.8	3.8	14.2
6/2/2012	1983.5	1.3	0.0	0.0	1.0	28.8	1295.4	157.8	6.3	35.3	33.7	618.8	6.2	-138.9
6/3/2012	1983.5	2.4	0.0	0.0	1.0	28.8	1223.3	159.6	6.3	35.3	33.7	700.8	7.0	-150.3
6/4/2012	1983.5	2.1	0.0	0.0	1.0	28.8	1261.7	159.0	6.3	35.3	33.7	503.2	5.0	11.1
6/5/2012	1983.5	0.1	0.0	0.0	1.0	28.8	1192.6	157.0	6.3	35.3	33.7	515.7	5.2	67.6
6/6/2012	1983.5	0.8	0.0	0.0	1.0	28.8	1120.6	156.7	6.3	35.3	33.7	670.3	6.7	-15.6
6/7/2012	1983.5	3.7	0.0	0.0	1.0	28.8	1118.4	156.6	6.3	35.3	33.7	689.0	6.9	-29.3
6/8/2012	1983.5	0.6	0.0	0.0	1.0	28.8	1029.5	156.5	6.3	35.3	33.7	842.1	8.4	-97.9
6/9/2012	1983.5	0.9	0.0	0.0	1.0	28.8	902.1	156.5	6.3	35.3	33.7	940.7	9.4	-69.8
6/10/2012	1983.5	0.7	0.0	0.0	1.0	28.8	931.8	156.2	6.3	35.3	33.7	793.2	7.9	49.5
6/11/2012	1983.5	2.2	0.0	0.0	1.0	28.8	1038.3	155.6	6.3	35.3	33.7	673.4	6.7	66.2
6/12/2012	1983.5	1.6	0.0	0.0	1.0	28.8	1053.1	155.0	6.3	35.3	33.7	706.5	7.1	17.9
6/13/2012	1983.5	0.8	0.0	0.0	1.0	28.8	1009.3	155.7	6.3	35.3	33.7	816.6	8.2	-50.9
6/14/2012	1983.5	1.0	0.0	0.0	1.0	28.8	1100.9	157.9	6.3	35.3	33.7	771.9	7.7	-99.3
6/15/2012	1983.5	0.6	0.0	0.0	1.0	28.8	1167.9	157.8	6.3	35.3	33.7	622.2	6.2	-15.6
6/16/2012	1983.5	1.6	0.0	0.0	1.0	28.8	1161.3	157.8	6.3	35.3	33.7	655.6	6.6	-41.7
6/17/2012	2975.2	2.4	0.0	0.0	1.0	28.8	1165.3	162.0	6.3	35.3	33.7	663.2	6.6	934.9
6/18/2012	2975.2	5.0	0.0	0.0	1.0	28.8	1704.3	174.2	6.3	35.3	33.7	632.9	6.3	417.0
6/19/2012	2975.2	0.8	0.0	0.0	1.0	28.8	2087.7	174.0	6.3	35.3	33.7	598.4	6.0	64.4
6/20/2012	2975.2	4.4	0.0	0.0	1.0	28.8	2045.4	172.9	6.3	35.3	33.7	689.4	6.9	19.6
6/21/2012	2975.2	1.7	0.0	0.0	1.0	28.8	2039.2	173.0	6.3	35.3	33.7	705.8	7.1	6.4
6/22/2012	2975.2	2.8	0.0	0.0	1.0	28.8	2035.2	173.5	6.3	35.3	33.7	734.4	7.3	-17.9
6/23/2012	2975.2	3.3	0.0	0.0	1.0	28.8	2029.5	173.5	6.3	35.3	33.7	728.1	7.3	-5.5
6/24/2012	2975.2	3.0	0.0	0.0	1.0	28.8	2020.7	173.2	6.3	35.3	33.7	791.2	7.9	-60.3
6/25/2012	2975.2	1.9	0.0	0.0	1.0	28.8	1959.4	172.6	6.3	35.3	33.7	827.2	8.3	-35.8
6/26/2012	2975.2	3.1	0.0	0.0	1.0	28.8	1950.1	173.1	6.3	35.3	33.7	783.3	7.8	18.5
6/27/2012	2975.2	3.9	0.0	0.0	1.0	28.8	1992.4	173.4	6.3	35.3	33.7	758.6	7.6	1.7
6/28/2012	2975.2	3.7	0.0	0.0	1.0	28.8	2010.9	173.1	6.3	35.3	33.7	752.8	7.5	-11.0
6/29/2012	2975.2	8.5	0.0	0.0	1.0	28.8	2020.7	172.4	6.3	35.3	33.7	747.3	7.5	-9.6
6/30/2012	2975.2	3.1	0.0	0.0	1.0	28.8	2039.3	172.7	6.3	35.3	33.7	746.6	7.5	-33.1
7/1/2012	3966.9	5.6	0.0	0.0	1.0	28.8	2052.9	171.6	6.3	31.0	33.7	727.4	7.3	972.1
7/2/2012	3966.9	6.7	0.0	0.0	1.0	28.8	2765.7	178.5	6.3	31.0	33.7	744.9	7.4	236.0
7/3/2012	3966.9	4.3	0.0	0.0	1.0	28.8	3152.5	179.7	6.3	31.0	33.7	651.6	6.5	-60.3
7/4/2012	3966.9	4.8	0.0	0.0	1.0	28.8	3194.4	179.5	6.3	31.0	33.7	541.4	5.4	9.8
7/5/2012	3966.9	9.3	0.0	0.0	1.0	28.8	3218.8	179.5	6.3	31.0	33.7	533.5	5.3	-2.1
7/6/2012	3966.9	5.1	0.0	0.0	1.0	28.8	3209.4	180.6	6.3	31.0	33.7	580.5	5.8	-45.4
7/7/2012	3966.9	7.8	0.0	0.0	1.0	28.8	3317.7	182.6	6.3	31.0	33.7	621.1	6.2	-194.0
7/8/2012	3966.9	6.5	0.0	0.0	1.0	28.8	3344.9	182.8	6.3	31.0	33.7	416.0	4.2	-15.6
7/9/2012	3966.9	5.8	0.0	0.0	1.0	28.8	3354.8	182.8	6.3	31.0	33.7	379.7	3.8	10.5

Table G5-1: RGCP Channel Water Budget Equation Analysis Segment 1 — Normal Single Pulse Hydrograph, Scenario S2 (Units = Acre-Feet)

	Segment 1 - Caballo Dam to Leasburg Dam (Upper Reach)													
	Qcus	Pc	Qcin	Qirf	Qeff	Qgwrf	Qcds	Qcs	Qfpr	ET	ET	Qda	Qdu	Δsic
Date	Upstream Channel Inflow, River Below Caballo Dam	Precipitation Flows in River Channel	In-channel Stormwater/ Ungaged Return Inflow	Irrigation Return Flow (none in Segment 1)	Treated Effluent Return Flow	Groundwater Return Flow	Downstream Channel Outflow, below Leasburg Cable	Channel Seepage	Floodplain Recharge	Open Water Channel Evaporation	Riparian Evapo-transpiration	Diversions Authorized (Percha, Arrey, & Leasburg)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
7/10/2012	3966.9	4.6	0.0	0.0	1.0	28.8	3379.5	182.7	6.3	31.0	33.7	367.6	3.7	-3.1
7/11/2012	3966.9	4.9	0.0	0.0	1.0	28.8	3397.1	182.5	6.3	31.0	33.7	323.9	3.2	24.0
7/12/2012	3966.9	5.3	0.0	0.0	1.0	28.8	3424.1	182.5	6.3	31.0	33.7	319.6	3.2	1.6
7/13/2012	3966.9	6.7	0.0	0.0	1.0	28.8	3438.0	182.7	6.3	31.0	33.7	333.5	3.3	-25.0
7/14/2012	3966.9	4.4	0.0	0.0	1.0	28.8	3397.6	180.5	6.3	31.0	33.7	359.6	3.6	-11.1
7/15/2012	2975.2	13.7	452.2	0.0	1.0	28.8	3070.4	175.3	6.3	31.0	33.7	358.0	3.6	-207.4
7/16/2012	2975.2	3.4	134.4	0.0	1.0	28.8	2347.5	173.8	6.3	31.0	33.7	763.2	7.6	-220.3
7/17/2012	2975.2	3.8	0.0	0.0	1.0	28.8	2019.6	171.8	6.3	31.0	33.7	747.5	7.5	-8.5
7/18/2012	2975.2	6.5	0.0	0.0	1.0	28.8	2019.0	171.9	6.3	31.0	33.7	764.9	7.6	-23.0
7/19/2012	2975.2	6.3	0.0	0.0	1.0	28.8	2035.2	173.1	6.3	31.0	33.7	759.0	7.6	-34.6
7/20/2012	2975.2	7.0	0.0	0.0	1.0	28.8	2014.2	173.2	6.3	31.0	33.7	774.0	7.7	-28.2
7/21/2012	2975.2	8.3	0.0	0.0	1.0	28.8	1949.2	172.5	6.3	31.0	33.7	874.7	8.7	-62.8
7/22/2012	2975.2	7.8	0.0	0.0	1.0	28.8	1903.9	171.8	6.3	31.0	33.7	861.0	8.6	-3.4
7/23/2012	2975.2	6.4	0.0	0.0	1.0	28.8	1910.1	170.1	6.3	31.0	33.7	867.2	8.7	-15.7
7/24/2012	2975.2	7.6	0.0	0.0	1.0	28.8	1897.9	167.9	6.3	31.0	33.7	867.2	8.7	-0.1
7/25/2012	1983.5	6.2	688.0	0.0	1.0	28.8	1797.2	164.6	6.3	31.0	33.7	875.3	8.8	-209.4
7/26/2012	1983.5	6.5	282.4	0.0	1.0	28.8	1262.4	154.0	6.3	31.0	33.7	1004.5	10.0	-199.7
7/27/2012	1983.5	5.7	0.0	0.0	1.0	28.8	828.9	152.5	6.3	31.0	33.7	1001.7	10.0	-45.2
7/28/2012	1983.5	6.0	0.0	0.0	1.0	28.8	889.1	154.3	6.3	31.0	33.7	953.7	9.5	-58.4
7/29/2012	1983.5	7.6	0.0	0.0	1.0	28.8	912.8	154.3	6.3	31.0	33.7	865.9	8.7	8.3
7/30/2012	1983.5	8.7	0.0	0.0	1.0	28.8	872.7	154.1	6.3	31.0	33.7	905.9	9.1	9.2
7/31/2012	1983.5	6.7	0.0	0.0	1.0	28.8	860.8	154.7	6.3	31.0	33.7	962.5	9.6	-38.6
8/1/2012	1388.4	7.2	394.6	0.0	1.0	28.8	873.0	153.2	6.3	30.3	33.7	911.1	9.1	-196.6
8/2/2012	1388.4	8.7	203.5	0.0	1.0	28.8	650.6	144.1	6.3	30.3	33.7	942.4	9.4	-186.3
8/3/2012	1388.4	8.8	0.0	0.0	1.0	28.8	301.0	141.0	6.3	30.3	33.7	946.2	9.5	-41.0
8/4/2012	1388.4	6.8	0.0	0.0	1.0	28.8	301.1	140.7	6.3	30.3	33.7	896.9	9.0	7.1
8/5/2012	1388.4	6.6	0.0	0.0	1.0	28.8	341.0	140.0	6.3	30.3	33.7	856.5	8.6	8.5
8/6/2012	1388.4	5.4	0.0	0.0	1.0	28.8	364.2	139.0	6.3	30.3	33.7	857.4	8.6	-15.9
8/7/2012	1388.4	6.8	0.0	0.0	1.0	28.8	371.4	139.3	6.3	30.3	33.7	846.6	8.5	-11.0
8/8/2012	1388.4	5.6	0.0	0.0	1.0	28.8	362.3	140.9	6.3	30.3	33.7	862.8	8.6	-21.0
8/9/2012	1388.4	7.8	0.0	0.0	1.0	28.8	330.9	141.7	6.3	30.3	33.7	923.1	9.2	-49.2
8/10/2012	1388.4	7.3	0.0	0.0	1.0	28.8	262.2	142.6	6.3	30.3	33.7	994.2	9.9	-53.7
8/11/2012	1388.4	8.8	0.0	0.0	1.0	28.8	279.5	145.1	6.3	30.3	33.7	956.2	9.6	-33.7
8/12/2012	1388.4	8.6	0.0	0.0	1.0	28.8	361.3	145.8	6.3	30.3	33.7	842.4	8.4	-1.4
8/13/2012	1388.4	10.2	0.0	0.0	1.0	28.8	452.5	147.2	6.3	30.3	33.7	881.2	8.8	-131.5
8/14/2012	1388.4	7.5	0.0	0.0	1.0	28.8	641.3	148.7	6.3	30.3	33.7	558.5	5.6	1.3
8/15/2012	1388.4	7.5	0.0	0.0	1.0	28.8	789.6	149.7	6.3	30.3	33.7	264.9	2.6	148.7
8/16/2012	1388.4	9.4	0.0	0.0	1.0	28.8	1063.6	151.0	6.3	30.3	33.7	11.5	0.1	131.2
8/17/2012	1388.4	3.3	0.0	0.0	1.0	28.8	1194.6	151.8	6.3	30.3	33.7	11.5	0.1	-6.7
8/18/2012	1388.4	8.4	0.0	0.0	1.0	28.8	1194.5	150.6	6.3	30.3	33.7	11.5	0.1	-0.4
8/19/2012	1388.4	6.0	0.0	0.0	1.0	28.8	1196.1	148.8	6.3	30.3	33.7	11.5	0.1	-2.6
8/20/2012	1388.4	7.0	0.0	0.0	1.0	28.8	1197.9	147.8	6.3	30.3	33.7	11.5	0.1	-2.3
8/21/2012	1388.4	11.8	0.0	0.0	1.0	28.8	1198.6	147.6	6.3	30.3	33.7	11.5	0.1	2.0
8/22/2012	1388.4	5.7	0.0	0.0	1.0	28.8	1198.5	148.2	6.3	30.3	33.7	11.5	0.1	-4.6
8/23/2012	1388.4	15.0	0.0	0.0	1.0	28.8	1197.8	149.0	6.3	30.3	33.7	11.5	0.1	4.6
8/24/2012	1388.4	10.0	0.0	0.0	1.0	28.8	1196.8	150.0	6.3	30.3	33.7	11.5	0.1	-0.4
8/25/2012	1388.4	5.1	0.0	0.0	1.0	28.8	1195.6	151.2	6.3	30.3	33.7	11.5	0.1	-5.3
8/26/2012	1388.4	5.5	0.0	0.0	1.0	28.8	1194.9	150.3	6.3	30.3	33.7	11.5	0.1	-3.3
8/27/2012	1388.4	4.6	0.0	0.0	1.0	28.8	1196.3	149.0	6.3	30.3	33.7	11.5	0.1	-4.4
8/28/2012	1388.4	2.1	0.0	0.0	1.0	28.8	1197.7	148.0	6.3	30.3	33.7	11.5	0.1	-7.2

Table G5-1: RGCP Channel Water Budget Equation Analysis Segment 1 — Normal Single Pulse Hydrograph, Scenario S2 (Units = Acre-Feet)

	Segment 1 - Caballo Dam to Leasburg Dam (Upper Reach)													
	Qcus	Pc	Qcin	Qirf	Qeff	Qgwrf	Qcds	Qcs	Qfpr	ET	ET	Qda	Qdu	Δsic
Date	Upstream Channel Inflow, River Below Caballo Dam	Precipitation Flows in River Channel	In-channel Stormwater/ Ungaged Return Inflow	Irrigation Return Flow (none in Segment 1)	Treated Effluent Return Flow	Groundwater Return Flow	Downstream Channel Outflow, below Leasburg Cable	Channel Seepage	Floodplain Recharge	Open Water Channel Evaporation	Riparian Evapo-transpiration	Diversions Authorized (Percha, Arrey, & Leasburg)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
8/29/2012	1388.4	6.6	0.0	0.0	1.0	28.8	1198.5	147.6	6.3	30.3	33.7	11.5	0.1	-3.1
8/30/2012	1388.4	7.3	0.0	0.0	1.0	28.8	1198.7	147.8	6.3	30.3	33.7	11.5	0.1	-2.8
8/31/2012	1388.4	5.1	0.0	0.0	1.0	28.8	1198.2	148.4	6.3	30.3	33.7	11.5	0.1	-5.1
9/1/2012	1388.4	5.2	0.0	0.0	1.0	28.8	1199.4	149.0	6.3	25.7	33.7	11.5	0.1	-2.2
9/2/2012	1388.4	5.6	0.0	0.0	1.0	28.8	1201.5	149.7	6.3	25.7	33.7	11.5	0.1	-4.7
9/3/2012	1388.4	3.9	0.0	0.0	1.0	28.8	1201.1	149.6	6.3	25.7	33.7	11.5	0.1	-5.8
9/4/2012	1388.4	4.4	0.0	0.0	1.0	28.8	1201.4	148.8	6.3	25.7	33.7	11.5	0.1	-4.9
9/5/2012	1388.4	8.2	0.0	0.0	1.0	28.8	1202.2	147.9	6.3	25.7	33.7	11.5	0.1	-1.0
9/6/2012	1388.4	4.6	0.0	0.0	1.0	28.8	1203.1	147.3	6.3	25.7	33.7	11.5	0.1	-4.8
9/7/2012	1388.4	5.9	0.0	0.0	1.0	28.8	1203.6	147.1	6.3	25.7	33.7	11.5	0.1	-3.8
9/8/2012	1388.4	2.8	0.0	0.0	1.0	28.8	1203.8	147.0	6.3	25.7	33.7	11.5	0.1	-7.0
9/9/2012	1388.4	4.3	0.0	0.0	1.0	28.8	1203.8	147.0	6.3	25.7	33.7	11.5	0.1	-5.5
9/10/2012	1388.4	5.2	0.0	0.0	1.0	28.8	1203.8	147.0	6.3	25.7	33.7	11.5	0.1	-4.7
9/11/2012	1388.4	4.7	0.0	0.0	1.0	28.8	1203.8	147.1	6.3	25.7	33.7	11.5	0.1	-5.3
9/12/2012	1388.4	11.0	0.0	0.0	1.0	28.8	1203.9	147.1	6.3	25.7	33.7	11.5	0.1	1.0
9/13/2012	1118.7	9.0	95.5	0.0	1.0	28.8	1203.7	146.4	6.3	25.7	33.7	11.5	0.1	-174.4
9/14/2012	0.0	7.0	10.4	0.0	1.0	28.8	0.0	73.8	6.3	13.0	33.7	11.5	0.1	-91.1

RGCP - Project Scale Water Budget - Segment 1 (Caballo Dam to Leasburg Dam)

ΔSic = (Qus + Pc + Qcin + Qirf + Qgwrf) - (Qcds + Qcs + Qfpr + ET + Qda + Qdu)

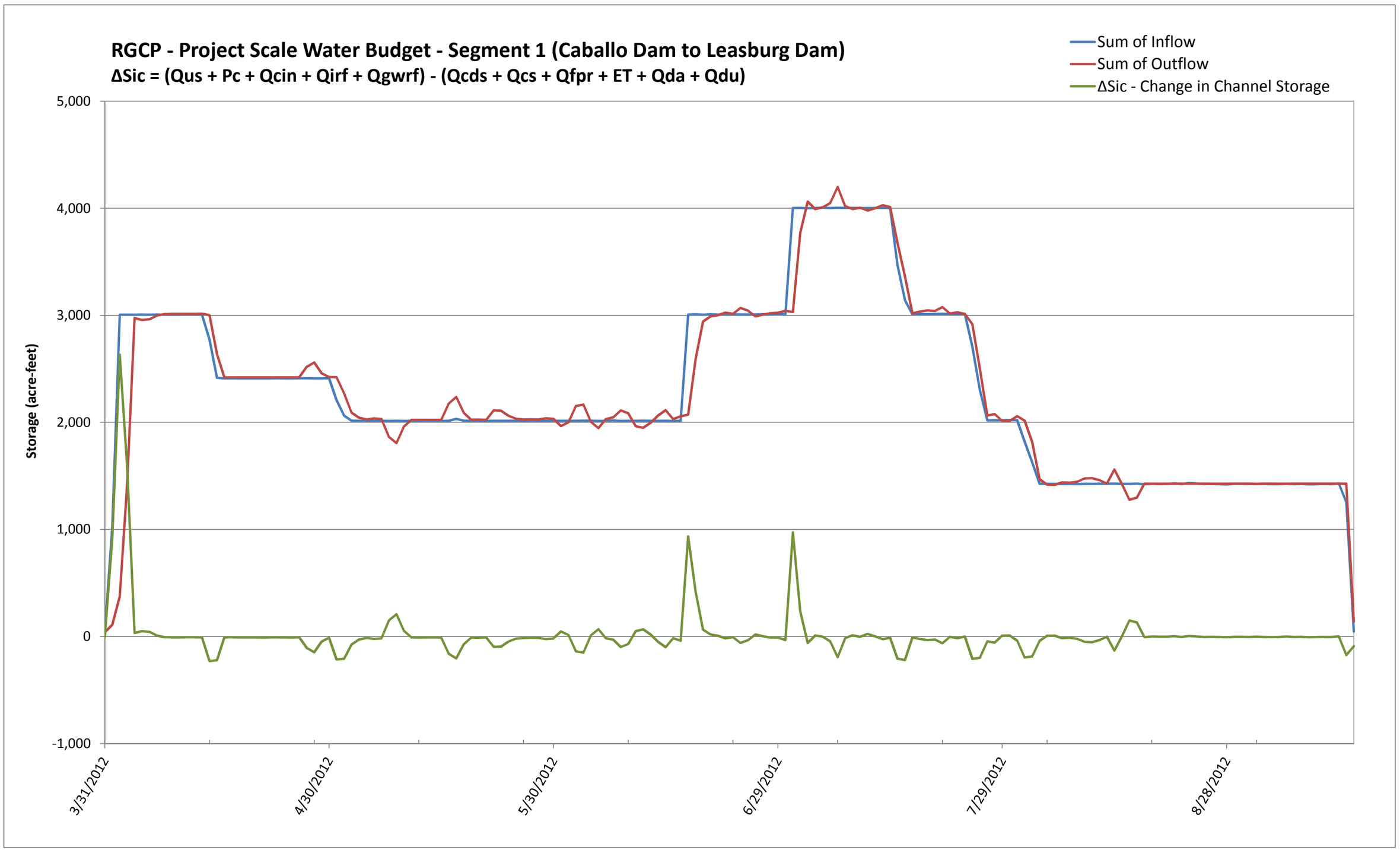


Table G5-2: RGCP Channel Water Budget Equation Analysis Segment 2 — Normal Single Pulse Hydrograph, Scenario S2 (Units = Acre-Feet)

	Segment 2 - Leasburg Dam to Mesilla Dam (Middle Reach)													
	Qcus	Pc	Qcin	Qirf	Qeff	Qgwrf	Qcds	Qcs	Qfpr	ET	ET	Qda	Qdu	Δsic
Date	Upstream Channel Inflow, below Leasburg Cable	Precipitation Flows in River Channel	In-channel Stormwater/ Ungaged Return Inflow	Irrigation Return Flow (La Mesa Drain)	Treated Effluent Return Flow	Groundwater Return Flow	Downstream Channel Outflow, below Mesilla Dam	Channel Seepage	Floodplain Recharge	Open Water Channel Evaporation	Riparian Evapo-transpiration	Diversions Authorized (Del Rio, Eastside, & Westside)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
3/31/2012	0.0	0.1	0.0	0.1	44.5	3.0	0.0	0.0	6.3	0.0	8.9	0.0	0.0	32.6
4/1/2012	0.0	0.1	0.0	0.1	44.5	3.0	0.0	0.0	6.3	0.0	8.9	0.0	0.0	32.6
4/2/2012	0.0	0.7	0.0	0.1	44.5	3.0	0.0	0.0	6.3	0.0	8.9	0.0	0.0	33.2
4/3/2012	628.9	0.6	0.0	0.1	44.5	3.0	0.0	132.7	6.3	0.5	8.9	0.0	0.0	528.8
4/4/2012	2269.1	0.7	0.0	0.1	44.5	3.0	337.4	1165.5	6.3	13.7	8.9	0.0	0.0	785.6
4/5/2012	2371.2	1.1	0.0	0.1	44.5	3.0	1146.4	1041.9	6.3	14.4	8.9	0.0	0.0	202.1
4/6/2012	2512.0	1.2	0.0	0.1	44.5	3.0	1740.4	623.9	6.3	14.4	8.9	0.0	0.0	167.0
4/7/2012	2674.9	0.2	0.0	0.1	44.5	3.0	2253.3	339.4	6.3	14.4	8.9	0.0	0.0	100.4
4/8/2012	2729.5	0.1	0.0	0.1	44.5	3.0	2439.8	261.2	6.3	14.4	8.9	0.0	0.0	46.6
4/9/2012	2742.0	0.0	0.0	0.1	44.5	3.0	2478.1	245.9	6.3	14.4	8.9	0.0	0.0	36.1
4/10/2012	2746.4	0.0	0.0	0.1	44.5	3.0	2488.2	242.3	6.3	14.4	8.9	0.0	0.0	33.9
4/11/2012	2748.9	0.9	0.0	0.1	44.5	3.0	2492.8	240.8	6.3	14.4	8.9	0.0	0.0	34.3
4/12/2012	2750.9	1.1	56.3	0.1	44.5	3.0	2157.6	239.6	6.3	14.4	8.9	694.2	6.9	-272.0
4/13/2012	2752.7	0.2	0.0	0.1	44.5	3.0	1783.7	238.6	6.3	14.4	8.9	737.1	7.4	4.3
4/14/2012	2743.4	0.1	0.0	0.1	44.5	3.0	1783.0	237.8	6.3	14.4	8.9	700.6	7.0	33.2
4/15/2012	2386.4	1.4	0.0	0.1	44.5	3.0	1616.5	235.5	6.3	14.4	8.9	716.8	7.2	-170.2
4/16/2012	2171.2	0.3	0.0	0.1	44.5	3.0	1249.6	231.7	6.3	14.4	8.9	681.7	6.8	19.7
4/17/2012	2171.9	0.2	0.0	0.1	44.5	3.0	1249.5	231.1	6.3	14.4	8.9	670.4	6.7	32.5
4/18/2012	2172.8	0.2	0.0	0.1	44.5	3.0	1233.9	230.5	6.3	14.4	8.9	718.0	7.2	1.4
4/19/2012	2173.6	0.2	0.0	0.1	44.5	3.0	1201.2	230.0	6.3	14.4	8.9	737.9	7.4	15.4
4/20/2012	2174.4	0.1	0.0	0.1	44.5	3.0	1202.8	229.6	6.3	14.4	8.9	716.0	7.2	36.9
4/21/2012	2175.1	0.1	0.0	0.1	44.5	3.0	1216.1	229.2	6.3	14.4	8.9	714.0	7.1	26.7
4/22/2012	2175.7	1.0	0.0	0.1	44.5	3.0	1218.1	228.8	6.3	14.4	8.9	714.0	7.1	26.6
4/23/2012	2176.3	0.7	0.0	0.1	44.5	3.0	1218.2	228.5	6.3	14.4	8.9	716.0	7.2	25.2
4/24/2012	2176.9	0.7	0.0	0.1	44.5	3.0	1219.0	228.2	6.3	14.4	8.9	714.0	7.1	27.2
4/25/2012	2177.4	0.4	0.0	0.1	44.5	3.0	1197.9	227.8	6.3	14.4	8.9	761.7	7.6	0.9
4/26/2012	2177.9	0.3	0.0	0.1	44.5	3.0	1160.0	227.3	6.3	14.4	8.9	791.4	7.9	9.7
4/27/2012	2176.7	0.7	0.0	0.1	44.5	3.0	1145.4	227.0	6.3	14.4	8.9	791.4	7.9	23.7
4/28/2012	2116.6	0.1	0.0	0.1	44.5	3.0	1119.5	226.6	6.3	14.4	8.9	791.4	7.9	-10.7
4/29/2012	2020.6	0.1	0.0	0.1	44.5	3.0	1089.4	225.5	6.3	14.4	8.9	666.4	6.7	50.8
4/30/2012	1983.6	0.4	0.0	0.1	44.5	3.0	1082.7	224.3	6.3	14.4	8.9	666.4	6.7	22.0
5/1/2012	1977.9	0.1	0.0	0.1	44.5	3.0	1165.6	223.9	6.3	17.9	8.9	480.0	4.8	118.2
5/2/2012	1771.6	1.8	0.0	0.1	44.5	3.0	1182.6	222.1	6.3	17.9	8.9	480.0	4.8	-101.6
5/3/2012	1557.3	1.4	0.0	0.1	44.5	3.0	912.5	216.1	6.3	17.9	8.9	480.0	4.8	-40.2
5/4/2012	1509.4	0.3	0.0	0.1	44.5	3.0	818.5	213.7	6.3	17.9	8.9	480.0	4.8	7.2
5/5/2012	1493.0	0.5	0.0	0.1	44.5	3.0	786.8	212.6	6.3	17.9	8.9	480.0	4.8	23.8
5/6/2012	1493.2	0.4	0.0	0.1	44.5	3.0	782.7	212.3	6.3	17.9	8.9	480.0	4.8	28.3
5/7/2012	1488.3	1.2	0.0	0.1	44.5	3.0	781.8	212.1	6.3	17.9	8.9	480.0	4.8	25.2
5/8/2012	1484.8	0.0	0.0	0.1	44.5	3.0	775.6	211.6	6.3	17.9	8.9	480.0	4.8	27.4
5/9/2012	1571.2	0.0	0.0	0.1	44.5	3.0	1024.9	213.6	6.3	17.9	8.9	0.0	0.0	347.3
5/10/2012	1724.2	0.0	0.0	0.1	44.5	3.0	1419.1	217.6	6.3	17.9	8.9	0.0	0.0	102.1
5/11/2012	1786.4	0.6	0.0	0.1	44.5	3.0	1538.1	219.7	6.3	17.9	8.9	0.0	0.0	43.8
5/12/2012	1786.7	0.0	0.0	0.1	44.5	3.0	1549.0	219.7	6.3	17.9	8.9	0.0	0.0	32.6
5/13/2012	1786.8	0.1	0.0	0.1	44.5	3.0	1549.3	219.5	6.3	17.9	8.9	0.0	0.0	32.7
5/14/2012	1786.9	1.0	0.0	0.1	44.5	3.0	1549.6	219.3	6.3	17.9	8.9	0.0	0.0	33.6

Table G5-2: RGCP Channel Water Budget Equation Analysis Segment 2 — Normal Single Pulse Hydrograph, Scenario S2 (Units = Acre-Feet)

	Segment 2 - Leasburg Dam to Mesilla Dam (Middle Reach)													
	Qcus	Pc	Qcin	Qirf	Qeff	Qgwrf	Qcds	Qcs	Qfpr	ET	ET	Qda	Qdu	Δsic
Date	Upstream Channel Inflow, below Leasburg Cable	Precipitation Flows in River Channel	In-channel Stormwater/ Ungaged Return Inflow	Irrigation Return Flow (La Mesa Drain)	Treated Effluent Return Flow	Groundwater Return Flow	Downstream Channel Outflow, below Mesilla Dam	Channel Seepage	Floodplain Recharge	Open Water Channel Evaporation	Riparian Evapo-transpiration	Diversions Authorized (Del Rio, Eastside, & Westside)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
5/15/2012	1787.1	1.2	0.0	0.1	44.5	3.0	1549.9	219.1	6.3	17.9	8.9	0.0	0.0	33.8
5/16/2012	1786.2	1.8	0.0	0.1	44.5	3.0	1550.0	219.4	6.3	17.9	8.9	0.0	0.0	33.2
5/17/2012	1703.0	0.4	0.0	0.1	44.5	3.0	1521.2	218.4	6.3	17.9	8.9	0.0	0.0	-21.6
5/18/2012	1561.6	0.5	0.0	0.1	44.5	3.0	1394.3	215.3	6.3	17.9	8.9	0.0	0.0	-32.9
5/19/2012	1496.9	0.0	0.0	0.1	44.5	3.0	1280.5	212.5	6.3	17.9	8.9	0.0	0.0	18.5
5/20/2012	1498.7	0.4	0.0	0.1	44.5	3.0	1267.9	212.4	6.3	17.9	8.9	0.0	0.0	33.3
5/21/2012	1498.9	1.6	0.0	0.1	44.5	3.0	1268.4	212.2	6.3	17.9	8.9	0.0	0.0	34.4
5/22/2012	1500.3	0.2	0.0	0.1	44.5	3.0	1269.4	212.2	6.3	17.9	8.9	0.0	0.0	33.5
5/23/2012	1457.9	1.3	0.0	0.1	44.5	3.0	1259.4	211.7	6.3	17.9	8.9	0.0	0.0	2.7
5/24/2012	1396.8	0.3	0.0	0.1	44.5	3.0	1195.0	209.4	6.3	17.9	8.9	0.0	0.0	7.3
5/25/2012	1370.9	1.6	0.0	0.1	44.5	3.0	1154.7	208.3	6.3	17.9	8.9	0.0	0.0	24.0
5/26/2012	1364.1	0.2	0.0	0.1	44.5	3.0	1140.1	207.8	6.3	17.9	8.9	0.0	0.0	30.9
5/27/2012	1364.2	0.9	0.0	0.1	44.5	3.0	1138.3	207.8	6.3	17.9	8.9	0.0	0.0	33.5
5/28/2012	1364.3	1.0	0.0	0.1	44.5	3.0	1138.9	207.2	6.3	17.9	8.9	0.0	0.0	33.8
5/29/2012	1364.4	0.5	0.0	0.1	44.5	3.0	1138.7	208.0	6.3	17.9	8.9	0.0	0.0	32.8
5/30/2012	1359.7	0.0	0.0	0.1	44.5	3.0	1137.9	207.3	6.3	17.9	8.9	0.0	0.0	29.1
5/31/2012	1355.3	1.2	0.0	0.1	44.5	3.0	1068.7	206.5	6.3	17.9	8.9	130.9	1.3	-36.4
6/1/2012	1383.5	0.6	137.0	0.1	44.5	3.0	633.8	204.2	6.3	21.2	8.9	931.2	9.3	-246.3
6/2/2012	1295.4	0.4	0.0	0.1	44.5	3.0	196.3	199.3	6.3	21.2	8.9	991.7	9.9	-90.2
6/3/2012	1223.3	1.0	0.0	0.1	44.5	3.0	16.6	191.8	6.3	21.2	8.9	1081.0	10.8	-64.6
6/4/2012	1261.7	0.4	0.0	0.1	44.5	3.0	0.9	192.3	6.3	20.7	8.9	1023.5	10.2	46.9
6/5/2012	1192.6	0.3	0.0	0.1	44.5	3.0	70.6	194.3	6.3	21.2	8.9	890.6	8.9	39.7
6/6/2012	1120.6	1.1	0.0	0.1	44.5	3.0	32.1	188.9	6.3	21.2	8.9	936.3	9.4	-33.7
6/7/2012	1118.4	2.5	0.0	0.1	44.5	3.0	0.0	186.5	6.3	20.8	8.9	917.6	9.2	19.3
6/8/2012	1029.5	1.2	0.0	0.1	44.5	3.0	53.1	187.4	6.3	21.2	8.9	764.5	7.6	29.2
6/9/2012	902.1	0.3	0.0	0.1	44.5	3.0	51.1	178.2	6.3	21.2	8.9	666.0	6.7	11.8
6/10/2012	931.8	3.5	0.0	0.1	44.5	3.0	7.2	171.7	6.3	21.2	8.9	813.4	8.1	-53.9
6/11/2012	1038.3	0.7	0.0	0.1	44.5	3.0	0.0	179.6	6.3	20.7	8.9	902.5	9.0	-40.4
6/12/2012	1053.1	0.9	0.0	0.1	44.5	3.0	103.7	186.9	6.3	21.2	8.9	601.0	6.0	167.7
6/13/2012	1009.3	0.2	89.0	0.1	44.5	3.0	65.9	182.0	6.3	21.3	8.9	1077.0	10.8	-226.0
6/14/2012	1100.9	1.9	0.0	0.1	44.5	3.0	0.0	180.3	6.3	20.7	8.9	1083.0	10.8	-159.6
6/15/2012	1167.9	3.2	0.0	0.1	44.5	3.0	0.0	187.5	6.3	20.6	8.9	1085.0	10.8	-100.4
6/16/2012	1161.3	1.8	4.0	0.1	44.5	3.0	0.0	186.5	6.3	20.6	8.9	1209.9	12.1	-229.5
6/17/2012	1165.3	2.5	0.0	0.1	44.5	3.0	0.0	189.4	6.3	20.6	8.9	1209.9	12.1	-231.7
6/18/2012	1704.3	4.5	0.0	0.1	44.5	3.0	44.4	195.9	6.3	20.7	8.9	1160.3	11.6	308.3
6/19/2012	2087.7	1.4	0.0	0.1	44.5	3.0	488.6	217.4	6.3	21.2	8.9	1513.4	15.1	-134.2
6/20/2012	2045.4	1.5	0.0	0.1	44.5	3.0	303.2	214.6	6.3	21.2	8.9	1535.2	15.4	-10.2
6/21/2012	2039.2	0.7	0.0	0.1	44.5	3.0	278.0	213.2	6.3	21.2	8.9	1505.5	15.1	39.5
6/22/2012	2035.2	0.4	0.0	0.1	44.5	3.0	283.9	214.2	6.3	21.2	8.9	1545.1	15.5	-11.9
6/23/2012	2029.5	1.5	0.0	0.1	44.5	3.0	214.0	215.2	6.3	21.2	8.9	1608.6	16.1	-11.6
6/24/2012	2020.7	1.8	0.0	0.1	44.5	3.0	162.0	215.0	6.3	21.2	8.9	1661.2	16.6	-21.0
6/25/2012	1959.4	1.0	0.0	0.1	44.5	3.0	88.8	212.1	6.3	21.2	8.9	1670.1	16.7	-16.0
6/26/2012	1950.1	0.9	0.0	0.1	44.5	3.0	35.0	210.5	6.3	21.2	8.9	1676.0	16.8	23.9
6/27/2012	1992.4	3.7	0.0	0.1	44.5	3.0	39.7	212.6	6.3	21.2	8.9	1733.6	17.3	4.1
6/28/2012	2010.9	2.6	0.0	0.1	44.5	3.0	52.0	214.4	6.3	21.2	8.9	1701.8	17.0	39.6
6/29/2012	2020.7	4.7	0.0	0.1	44.5	3.0	64.2	213.4	6.3	21.2	8.9	1731.6	17.3	10.2
6/30/2012	2039.3	2.8	0.0	0.1	44.5	3.0	63.2	212.0	6.3	21.2	8.9	1737.5	17.4	23.3
7/1/2012	2052.9	1.5	0.0	0.1	44.5	3.0	92.4	211.3	6.3	18.6	8.9	1693.9	16.9	53.7
7/2/2012	2765.7	4.9	0.0	0.1	44.5	3.0	472.1	217.4	6.3	18.6	8.9	1632.4	16.3	446.2
7/3/2012	3152.5	1.2	0.0	0.1	44.5	3.0	1261.2	224.6	6.3	18.6	8.9	1594.7	15.9	71.2

Table G5-2: RGCP Channel Water Budget Equation Analysis Segment 2 — Normal Single Pulse Hydrograph, Scenario S2 — (Units = Acre-Feet)

	Segment 2 - Leasburg Dam to Mesilla Dam (Middle Reach)													
	Qcus	Pc	Qcin	Qirf	Qeff	Qgwrf	Qcds	Qcs	Qfpr	ET	ET	Qda	Qdu	Δsic
Date	Upstream Channel Inflow, below Leasburg Cable	Precipitation Flows in River Channel	In-channel Stormwater/ Ungaged Return Inflow	Irrigation Return Flow (La Mesa Drain)	Treated Effluent Return Flow	Groundwater Return Flow	Downstream Channel Outflow, below Mesilla Dam	Channel Seepage	Floodplain Recharge	Open Water Channel Evaporation	Riparian Evapo-transpiration	Diversions Authorized (Del Rio, Eastside, & Westside)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
7/4/2012	3194.4	2.1	0.0	0.1	44.5	3.0	1385.0	225.7	6.3	18.6	8.9	1509.4	15.1	75.2
7/5/2012	3218.8	4.9	0.0	0.1	44.5	3.0	1516.1	227.0	6.3	18.6	8.9	1392.4	13.9	88.1
7/6/2012	3209.4	1.3	0.0	0.1	44.5	3.0	1618.0	227.0	6.3	18.6	8.9	1303.1	13.0	63.4
7/7/2012	3317.7	1.8	0.0	4.5	44.5	3.0	1767.6	226.3	6.3	18.6	8.9	1206.0	12.1	125.9
7/8/2012	3344.9	2.2	0.0	9.3	44.5	3.0	1941.7	226.8	6.3	18.6	8.9	1118.7	11.2	71.7
7/9/2012	3354.8	6.2	0.0	10.1	44.5	3.0	2038.2	227.2	6.3	18.6	8.9	1001.7	10.0	107.8
7/10/2012	3379.5	4.8	0.0	9.8	44.5	3.0	2123.8	227.6	6.3	18.6	8.9	1007.6	10.1	38.7
7/11/2012	3397.1	3.0	0.0	3.9	44.5	3.0	2143.0	228.0	6.3	18.6	8.9	989.8	9.9	47.1
7/12/2012	3424.1	1.8	0.0	10.1	44.5	3.0	2180.5	226.4	6.3	18.6	8.9	991.7	9.9	41.1
7/13/2012	3438.0	2.1	0.0	10.5	44.5	3.0	2190.0	226.7	6.3	18.6	8.9	1009.6	10.1	27.9
7/14/2012	3397.6	1.6	0.0	10.9	44.5	3.0	2172.0	226.0	6.3	18.6	8.9	1011.6	10.1	4.1
7/15/2012	3070.4	3.5	0.0	11.4	44.5	3.0	2139.5	224.1	6.3	18.6	8.9	646.6	6.5	82.3
7/16/2012	2347.5	2.0	11.7	11.0	44.5	3.0	1768.0	224.8	6.3	18.6	8.9	646.6	6.5	-260.1
7/17/2012	2019.6	6.5	0.0	6.7	44.5	3.0	1098.3	220.4	6.3	18.6	8.9	797.4	8.0	-77.4
7/18/2012	2019.0	1.9	0.0	8.8	44.5	3.0	846.9	218.4	6.3	18.6	8.9	1094.9	10.9	-127.7
7/19/2012	2035.2	2.7	0.0	10.3	44.5	3.0	641.2	216.8	6.3	18.6	8.9	1207.9	12.1	-16.0
7/20/2012	2014.2	2.6	0.0	11.7	44.5	3.0	482.3	214.5	6.3	18.6	8.9	1442.0	14.4	-110.9
7/21/2012	1949.2	5.0	0.0	12.3	44.5	3.0	291.8	211.4	6.3	18.6	8.9	1475.7	14.8	-13.4
7/22/2012	1903.9	2.1	0.0	12.9	44.5	3.0	183.4	210.1	6.3	18.6	8.9	1531.2	15.3	-7.5
7/23/2012	1910.1	4.7	0.0	13.5	44.5	3.0	158.2	210.3	6.3	18.6	8.9	1505.5	15.1	53.0
7/24/2012	1897.9	1.6	0.0	13.9	44.5	3.0	420.3	212.9	6.3	18.6	8.9	979.8	9.8	304.3
7/25/2012	1797.2	2.0	0.0	14.2	44.5	3.0	760.8	215.3	6.3	18.6	8.9	731.3	7.3	112.4
7/26/2012	1262.4	4.7	0.0	14.6	44.5	3.0	712.7	208.9	6.3	18.6	8.9	602.1	6.0	-234.2
7/27/2012	828.9	2.0	0.0	14.8	44.5	3.0	197.5	177.7	6.3	18.6	8.9	604.9	6.0	-126.6
7/28/2012	889.1	3.3	0.0	15.2	44.5	3.0	24.0	168.3	6.3	18.6	8.9	652.9	6.5	69.5
7/29/2012	912.8	6.9	0.0	15.0	44.5	3.0	21.7	175.0	6.3	18.6	8.9	740.7	7.4	3.6
7/30/2012	872.7	2.9	0.0	15.1	44.5	3.0	0.0	171.9	6.3	18.4	8.9	700.7	7.0	25.0
7/31/2012	860.8	1.2	0.0	14.9	44.5	3.0	3.9	168.6	6.3	18.6	8.9	644.1	6.4	67.6
8/1/2012	873.0	6.9	0.0	13.8	44.5	3.0	286.2	172.6	6.3	18.2	8.9	100.4	1.0	347.5
8/2/2012	650.6	6.6	0.0	14.3	44.5	3.0	579.3	167.8	6.3	18.2	8.9	69.2	0.7	-131.4
8/3/2012	301.0	4.8	65.0	15.7	44.5	3.0	360.9	115.5	6.3	18.2	8.9	65.3	0.7	-141.7
8/4/2012	301.1	1.9	0.0	15.8	44.5	3.0	104.0	84.1	6.3	18.2	8.9	114.7	1.1	29.0
8/5/2012	341.0	4.2	0.0	15.7	44.5	3.0	61.4	92.9	6.3	18.2	8.9	155.1	1.6	64.1
8/6/2012	364.2	3.7	0.0	15.8	44.5	3.0	72.6	99.9	6.3	18.2	8.9	154.2	1.5	69.7
8/7/2012	371.4	4.7	0.0	15.9	44.5	3.0	85.1	102.6	6.3	18.2	8.9	165.0	1.6	51.8
8/8/2012	362.3	1.4	0.0	16.1	44.5	3.0	94.5	99.9	6.3	18.2	8.9	148.8	1.5	49.2
8/9/2012	330.9	5.1	0.0	16.1	44.5	3.0	125.3	96.7	6.3	18.2	8.9	88.4	0.9	55.0
8/10/2012	262.2	3.6	0.0	114.8	44.5	3.0	161.0	86.7	6.3	18.2	8.9	17.4	0.2	129.5
8/11/2012	279.5	5.1	0.0	83.8	44.5	3.0	130.0	75.0	6.3	18.2	8.9	55.3	0.6	121.6
8/12/2012	361.3	6.6	0.0	199.3	44.5	3.0	75.7	89.9	6.3	18.2	8.9	169.2	1.7	244.8
8/13/2012	452.5	4.3	0.0	192.3	44.5	3.0	93.1	101.5	6.3	18.2	8.9	130.4	1.3	337.0
8/14/2012	641.3	10.7	0.0	163.5	44.5	3.0	60.5	131.4	6.3	18.2	8.9	453.0	4.5	180.3
8/15/2012	789.6	6.8	0.0	236.4	44.5	3.0	2.0	146.3	6.3	18.1	8.9	731.0	7.3	160.4
8/16/2012	1063.6	2.6	0.0	18.1	44.5	3.0	143.4	173.5	6.3	18.2	8.9	402.1	4.0	375.4
8/17/2012	1194.6	4.5	0.0	18.5	44.5	3.0	547.2	193.0	6.3	18.2	8.9	370.3	3.7	117.6
8/18/2012	1194.5	3.3	0.0	18.7	44.5	3.0	605.7	195.1	6.3	18.2	8.9	380.3	3.8	45.7
8/19/2012	1196.1	3.4	0.0	18.4	44.5	3.0	595.8	195.9	6.3	18.2	8.9	391.1	3.9	45.3
8/20/2012	1197.9	8.3	0.0	18.3	44.5	3.0	589.0	196.5	6.3	18.2	8.9	397.4	4.0	51.7
8/21/2012	1198.6	1.8	0.0	18.4	44.5	3.0	618.1	196.9	6.3	18.2	8.9	328.5	3.3	86.1
8/22/2012	1198.5	7.1	0.0	17.8	44.5	3.0	676.9	197.2	6.3	18.2	8.9	279.8	2.8	80.8

Table G5-2: RGCP Channel Water Budget Equation Analysis Segment 2 — Normal Single Pulse Hydrograph, Scenario S2 (Units = Acre-Feet)

	Segment 2 - Leasburg Dam to Mesilla Dam (Middle Reach)													
	Qcus	Pc	Qcin	Qirf	Qeff	Qgwrf	Qcds	Qcs	Qfpr	ET	ET	Qda	Qdu	Δsic
Date	Upstream Channel Inflow, below Leasburg Cable	Precipitation Flows in River Channel	In-channel Stormwater/ Ungaged Return Inflow	Irrigation Return Flow (La Mesa Drain)	Treated Effluent Return Flow	Groundwater Return Flow	Downstream Channel Outflow, below Mesilla Dam	Channel Seepage	Floodplain Recharge	Open Water Channel Evaporation	Riparian Evapo-transpiration	Diversions Authorized (Del Rio, Eastside, & Westside)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
8/23/2012	1197.8	4.9	0.0	17.1	44.5	3.0	684.9	196.6	6.3	18.2	8.9	319.3	3.2	29.9
8/24/2012	1196.8	3.7	0.0	16.3	44.5	3.0	663.9	195.6	6.3	18.2	8.9	319.9	3.2	48.3
8/25/2012	1195.6	5.8	0.0	17.3	44.5	3.0	663.6	195.1	6.3	18.2	8.9	320.2	3.2	50.8
8/26/2012	1194.9	2.8	0.0	17.3	44.5	3.0	675.4	195.2	6.3	18.2	8.9	292.0	2.9	63.6
8/27/2012	1196.3	5.8	0.0	17.1	44.5	3.0	690.7	195.9	6.3	18.2	8.9	289.8	2.9	54.1
8/28/2012	1197.7	2.8	0.0	16.8	44.5	3.0	661.5	196.2	6.3	18.2	8.9	358.0	3.6	12.2
8/29/2012	1198.5	1.2	0.0	16.7	44.5	3.0	619.5	196.0	6.3	18.2	8.9	373.8	3.7	37.5
8/30/2012	1198.7	4.9	0.0	16.4	44.5	3.0	597.6	196.2	6.3	18.2	8.9	401.8	4.0	34.5
8/31/2012	1198.2	3.8	0.0	16.1	44.5	3.0	579.9	195.8	6.3	18.2	8.9	407.0	4.1	45.5
9/1/2012	1199.4	0.9	0.0	15.7	44.5	3.0	582.3	195.3	6.3	15.5	8.9	400.6	4.0	50.6
9/2/2012	1201.5	4.8	0.0	15.6	44.5	3.0	591.4	195.0	6.3	15.5	8.9	396.1	4.0	52.3
9/3/2012	1201.1	2.8	0.0	15.7	44.5	3.0	595.1	194.8	6.3	15.5	8.9	393.9	3.9	48.5
9/4/2012	1201.4	4.8	0.0	15.7	44.5	3.0	624.6	195.0	6.3	15.5	8.9	333.8	3.3	82.0
9/5/2012	1202.2	4.1	0.0	15.5	44.5	3.0	761.8	195.8	6.3	15.5	8.9	105.2	1.1	174.7
9/6/2012	1203.1	5.3	0.0	14.2	44.5	3.0	929.4	197.0	6.3	15.5	8.9	5.5	0.1	107.5
9/7/2012	1203.6	5.6	0.0	13.2	44.5	3.0	976.5	197.2	6.3	15.5	8.9	24.0	0.2	41.4
9/8/2012	1203.8	2.0	0.0	14.1	44.5	3.0	867.1	196.9	6.3	15.5	8.9	246.9	2.5	-76.6
9/9/2012	1203.8	2.1	0.0	14.2	44.5	3.0	670.3	195.9	6.3	15.5	8.9	410.8	4.1	-44.1
9/10/2012	1203.8	2.4	0.0	13.8	44.5	3.0	480.9	194.2	6.3	15.5	8.9	631.5	6.3	-76.0
9/11/2012	1203.8	3.2	0.0	12.8	44.5	3.0	343.6	192.3	6.3	15.5	8.9	675.5	6.8	18.5
9/12/2012	1203.9	5.8	0.0	10.5	44.5	3.0	496.2	194.5	6.3	15.5	8.9	295.7	3.0	247.6
9/13/2012	1203.7	3.0	0.0	8.5	44.5	3.0	829.8	196.8	6.3	15.5	8.9	0.0	0.0	205.5
9/14/2012	0.0	3.3	0.0	9.7	44.5	3.0	0.0	99.2	6.3	7.8	8.9	0.0	0.0	-61.7

RGCP - Project Scale Water Budget - Segment 2 (Leasburg Dam to Mesilla Dam)

ΔSic = (Qus + Pc + Qcin + Qirf + Qgwrf) - (Qcds + Qcs + Qfpr + ET + Qda + Qdu)

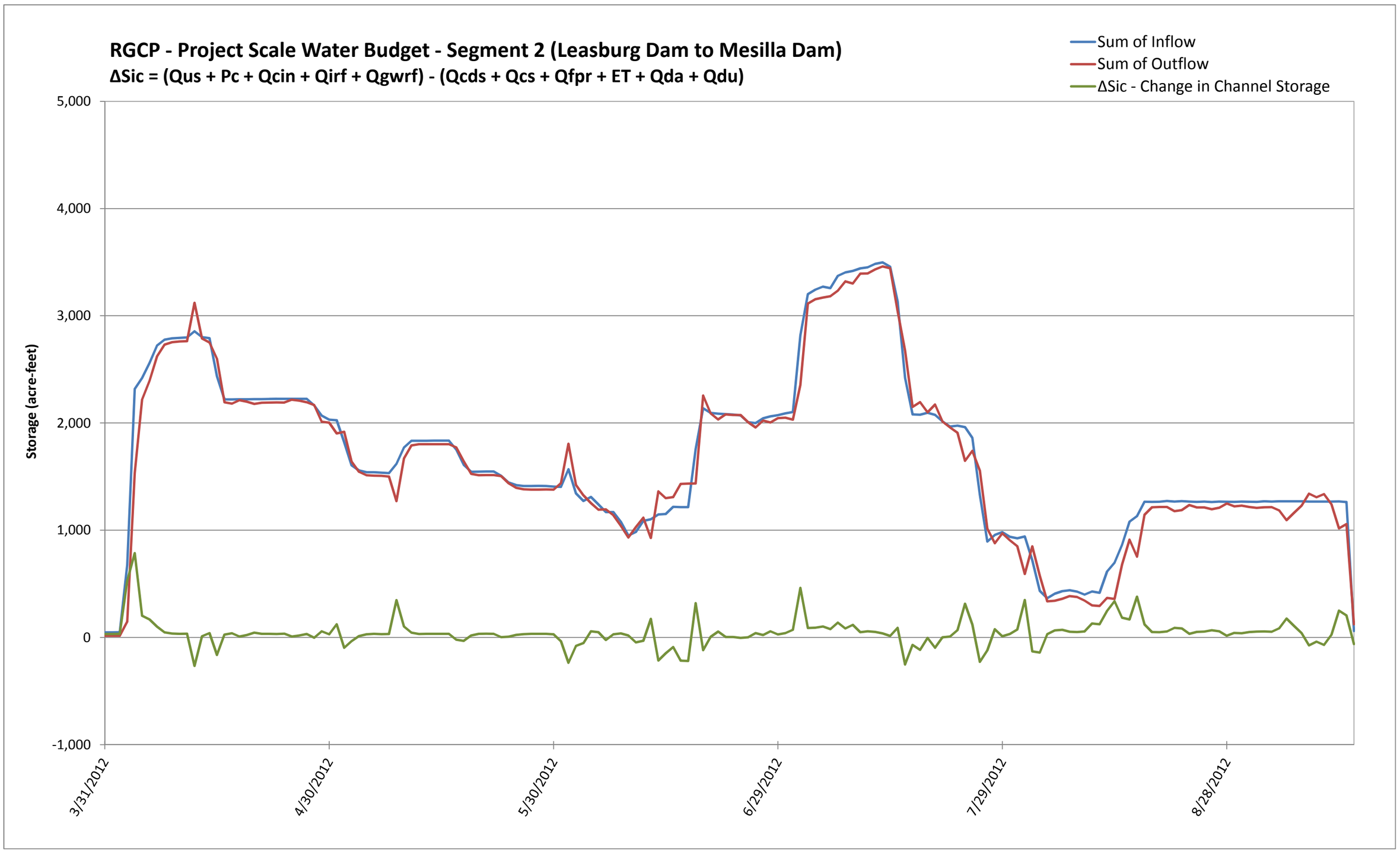


Table G5-3: RGCP Channel Water Budget Equation Analysis Segment 3 — Normal Single Pulse Hydrograph, Scenario S2 — (Units = Acre-Feet)

	Segment 3 - Mesilla Dam to Anthony Metering Station (Lower Reach A)													
	Qcus	Pc	Qcin	Qirf	Qeff	Qgwrf	Qcds	Qcs	Qfpr	ET	ET	Qda	Qdu	Δsic
Date	Upstream Channel Inflow, below Mesilla Dam	Precipitation Flows in River Channel	In-channel Stormwater/ Ungaged Return Inflow	Irrigation Return Flow (Del Rio Drain)	Treated Effluent Return Flow	Groundwater Return Flow	Downstream Channel Outflow, below Anthony Station	Channel Seepage	Floodplain Recharge	Open Water Channel Evaporation	Riparian Evapo-transpiration	Diversions Authorized (None)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
3/31/2012	0.0	0.1	0.0	0.8	2.9	0.0	0.0	0.0	11.8	0.0	8.4	0.0	0.0	-16.3
4/1/2012	0.0	0.1	0.0	0.8	2.9	0.0	0.0	0.0	11.8	0.0	8.4	0.0	0.0	-16.3
4/2/2012	0.0	0.5	0.0	0.8	2.9	0.0	0.0	0.0	11.8	0.0	8.4	0.0	0.0	-15.9
4/3/2012	0.0	0.4	0.0	0.9	2.9	0.0	0.0	0.0	11.8	0.0	8.4	0.0	0.0	-16.0
4/4/2012	337.4	0.5	0.0	0.8	2.9	0.0	0.0	141.2	11.8	1.0	8.4	0.0	0.0	179.3
4/5/2012	1146.4	0.7	0.0	4.4	2.9	0.0	53.6	802.0	11.8	9.2	8.4	0.0	0.0	269.5
4/6/2012	1740.4	0.8	0.0	61.8	2.9	0.0	388.0	1028.9	11.8	9.6	8.4	0.0	0.0	359.2
4/7/2012	2253.3	0.1	0.0	85.5	2.9	0.0	1172.1	857.7	11.8	9.6	8.4	0.0	0.0	282.4
4/8/2012	2439.8	0.0	0.0	90.5	2.9	0.0	1837.1	537.9	11.8	9.6	8.4	0.0	0.0	128.5
4/9/2012	2478.1	0.0	0.0	101.5	2.9	0.0	2096.5	360.2	11.8	9.6	8.4	0.0	0.0	96.0
4/10/2012	2488.2	0.0	0.0	111.7	2.9	0.0	2153.1	322.5	11.8	9.6	8.4	0.0	0.0	97.5
4/11/2012	2492.8	0.6	0.0	110.7	2.9	0.0	2166.7	315.0	11.8	9.6	8.4	0.0	0.0	95.6
4/12/2012	2157.6	0.7	0.0	108.1	2.9	0.0	2006.0	311.1	11.8	9.6	8.4	0.0	0.0	-77.5
4/13/2012	1783.7	0.1	0.0	97.7	2.9	0.0	1516.0	306.0	11.8	9.6	8.4	0.0	0.0	32.7
4/14/2012	1783.0	0.1	0.0	99.5	2.9	0.0	1458.9	305.0	11.8	9.6	8.4	0.0	0.0	91.8
4/15/2012	1616.5	0.9	0.0	50.7	2.9	0.0	1420.6	303.1	11.8	9.6	8.4	0.0	0.0	-82.4
4/16/2012	1249.6	0.2	0.0	42.5	2.9	0.0	1028.8	293.5	11.8	9.6	8.4	0.0	0.0	-56.9
4/17/2012	1249.5	0.1	0.0	50.7	2.9	0.0	941.2	291.6	11.8	9.6	8.4	0.0	0.0	40.7
4/18/2012	1233.9	0.1	0.0	51.0	2.9	0.0	946.2	291.1	11.8	9.6	8.4	0.0	0.0	20.9
4/19/2012	1201.2	0.1	0.0	48.7	2.9	0.0	911.9	289.4	11.8	9.6	8.4	0.0	0.0	21.9
4/20/2012	1202.8	0.0	0.0	48.3	2.9	0.0	898.8	288.8	11.8	9.6	8.4	0.0	0.0	36.7
4/21/2012	1216.1	0.0	0.0	42.2	2.9	0.0	914.3	289.3	11.8	9.6	8.4	0.0	0.0	27.8
4/22/2012	1218.1	0.6	0.0	33.3	2.9	0.0	918.9	288.9	11.8	9.6	8.4	0.0	0.0	17.4
4/23/2012	1218.2	0.5	0.0	29.6	2.9	0.0	920.2	288.5	11.8	9.6	8.4	0.0	0.0	12.7
4/24/2012	1219.0	0.4	0.0	29.5	2.9	0.0	920.4	288.1	11.8	9.6	8.4	0.0	0.0	13.6
4/25/2012	1197.9	0.3	0.0	27.1	2.9	0.0	915.1	287.4	11.8	9.6	8.4	0.0	0.0	-4.1
4/26/2012	1160.0	0.2	0.0	25.8	2.9	0.0	878.1	285.3	11.8	9.6	8.4	0.0	0.0	-4.3
4/27/2012	1145.4	0.5	0.0	34.6	2.9	0.0	853.8	284.7	11.8	9.6	8.4	0.0	0.0	15.2
4/28/2012	1119.5	0.0	0.0	36.6	2.9	0.0	845.0	284.9	11.8	9.6	8.4	0.0	0.0	-0.6
4/29/2012	1089.4	0.1	0.0	29.3	2.9	0.0	797.3	282.3	11.8	9.6	8.4	0.0	0.0	12.3
4/30/2012	1082.7	0.3	0.0	33.7	2.9	0.0	799.0	282.3	11.8	9.6	8.4	0.0	0.0	8.4
5/1/2012	1165.6	0.0	0.0	30.2	2.9	0.0	813.7	283.1	11.8	11.9	8.4	0.0	0.0	70.0
5/2/2012	1182.6	1.1	0.0	28.0	2.9	0.0	928.7	286.7	11.8	11.9	8.4	0.0	0.0	-32.9
5/3/2012	912.5	0.9	0.0	27.4	2.9	0.0	736.8	273.2	11.8	11.9	8.4	0.0	0.0	-98.4
5/4/2012	818.5	0.2	0.0	27.3	2.9	0.0	574.8	258.8	11.8	11.9	8.4	0.0	0.0	-16.7
5/5/2012	786.8	0.3	0.0	27.5	2.9	0.0	536.2	252.1	11.8	11.9	8.4	0.0	0.0	-2.9
5/6/2012	782.7	0.3	0.0	6.0	2.9	0.0	521.1	249.8	11.8	11.9	8.4	0.0	0.0	-11.1
5/7/2012	781.8	0.7	0.0	0.3	2.9	0.0	521.3	249.7	11.8	11.9	8.4	0.0	0.0	-17.3
5/8/2012	775.6	0.0	0.0	0.8	2.9	0.0	518.0	248.8	11.8	11.9	8.4	0.0	0.0	-19.5
5/9/2012	1024.9	0.0	0.0	0.9	2.9	0.0	560.8	260.8	11.8	11.9	8.4	0.0	0.0	175.0
5/10/2012	1419.1	0.0	0.0	0.9	2.9	0.0	1015.9	290.1	11.8	11.9	8.4	0.0	0.0	84.8
5/11/2012	1538.1	0.4	0.0	0.8	2.9	0.0	1202.9	294.1	11.8	11.9	8.4	0.0	0.0	13.1
5/12/2012	1549.0	0.0	0.0	0.8	2.9	0.0	1242.4	294.5	11.8	11.9	8.4	0.0	0.0	-16.2
5/13/2012	1549.3	0.1	0.0	0.8	2.9	0.0	1242.9	294.4	11.8	11.9	8.4	0.0	0.0	-16.2
5/14/2012	1549.6	0.6	0.0	0.8	2.9	0.0	1243.3	294.2	11.8	11.9	8.4	0.0	0.0	-15.6

Table G5-3: RGCP Channel Water Budget Equation Analysis Segment 3 — Normal Single Pulse Hydrograph, Scenario S2 — (Units = Acre-Feet)

	Segment 3 - Mesilla Dam to Anthony Metering Station (Lower Reach A)													
	Qcus	Pc	Qcin	Qirf	Qeff	Qgwrf	Qcds	Qcs	Qfpr	ET	ET	Qda	Qdu	Δsic
Date	Upstream Channel Inflow, below Mesilla Dam	Precipitation Flows in River Channel	In-channel Stormwater/ Ungaged Return Inflow	Irrigation Return Flow (Del Rio Drain)	Treated Effluent Return Flow	Groundwater Return Flow	Downstream Channel Outflow, below Anthony Station	Channel Seepage	Floodplain Recharge	Open Water Channel Evaporation	Riparian Evapo-transpiration	Diversions Authorized (None)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
5/15/2012	1549.9	0.7	0.0	0.8	2.9	0.0	1243.6	294.1	11.8	11.9	8.4	0.0	0.0	-15.4
5/16/2012	1550.0	1.1	0.0	0.8	2.9	0.0	1243.0	295.0	11.8	11.9	8.4	0.0	0.0	-15.2
5/17/2012	1521.2	0.3	0.0	0.8	2.9	0.0	1236.8	294.2	11.8	11.9	8.4	0.0	0.0	-37.9
5/18/2012	1394.3	0.3	0.0	0.8	2.9	0.0	1141.6	290.3	11.8	11.9	8.4	0.0	0.0	-65.6
5/19/2012	1280.5	0.0	0.0	0.8	2.9	0.0	1013.6	286.8	11.8	11.9	8.4	0.0	0.0	-48.3
5/20/2012	1267.9	0.3	0.0	0.8	2.9	0.0	969.2	285.9	11.8	11.9	8.4	0.0	0.0	-15.3
5/21/2012	1268.4	1.0	0.0	0.8	2.9	0.0	970.6	285.8	11.8	11.9	8.4	0.0	0.0	-15.4
5/22/2012	1269.4	0.1	0.0	0.8	2.9	0.0	971.6	285.0	11.8	11.9	8.4	0.0	0.0	-15.4
5/23/2012	1259.4	0.8	0.0	0.8	2.9	0.0	972.7	284.5	11.8	11.9	8.4	0.0	0.0	-25.4
5/24/2012	1195.0	0.2	0.0	0.7	2.9	0.0	926.3	282.8	11.8	11.9	8.4	0.0	0.0	-42.3
5/25/2012	1154.7	1.0	0.0	0.8	2.9	0.0	874.4	280.5	11.8	11.9	8.4	0.0	0.0	-27.5
5/26/2012	1140.1	0.1	0.0	0.8	2.9	0.0	852.4	279.6	11.8	11.9	8.4	0.0	0.0	-20.1
5/27/2012	1138.3	0.6	0.0	0.8	2.9	0.0	847.1	279.3	11.8	11.9	8.4	0.0	0.0	-15.9
5/28/2012	1138.9	0.6	0.0	0.8	2.9	0.0	847.6	278.9	11.8	11.9	8.4	0.0	0.0	-15.3
5/29/2012	1138.7	0.3	0.0	0.8	2.9	0.0	847.9	279.2	11.8	11.9	8.4	0.0	0.0	-16.4
5/30/2012	1137.9	0.0	0.0	0.8	2.9	0.0	847.4	279.3	11.8	11.9	8.4	0.0	0.0	-17.2
5/31/2012	1068.7	0.7	0.0	0.8	2.9	0.0	824.6	276.5	11.8	11.9	8.4	0.0	0.0	-60.1
6/1/2012	633.8	0.4	23.2	0.8	2.9	0.0	660.7	247.9	11.8	14.1	8.4	0.0	0.0	-281.7
6/2/2012	196.3	0.3	39.5	0.8	2.9	0.0	239.5	120.5	11.8	14.1	8.4	0.0	0.0	-154.5
6/3/2012	16.6	0.6	48.0	0.8	2.9	0.0	68.2	47.9	11.8	14.2	8.4	0.0	0.0	-81.6
6/4/2012	0.9	0.3	0.0	0.8	2.9	0.0	0.5	5.0	11.8	6.0	8.4	0.0	0.0	-26.8
6/5/2012	70.6	0.2	0.0	0.8	2.9	0.0	0.0	20.4	11.8	4.9	8.4	0.0	0.0	29.0
6/6/2012	32.1	0.7	0.0	1.2	2.9	0.0	5.8	43.3	11.8	13.8	8.4	0.0	0.0	-46.1
6/7/2012	0.0	1.6	0.0	14.5	2.9	0.0	1.4	9.9	11.8	10.0	8.4	0.0	0.0	-22.5
6/8/2012	53.1	0.7	0.0	20.3	2.9	0.0	0.0	13.5	11.8	3.6	8.4	0.0	0.0	39.8
6/9/2012	51.1	0.2	0.0	11.1	2.9	0.0	1.1	42.3	11.8	12.5	8.4	0.0	0.0	-10.7
6/10/2012	7.2	2.2	0.0	38.4	2.9	0.0	1.1	24.8	11.8	14.6	8.4	0.0	0.0	-9.9
6/11/2012	0.0	0.4	0.0	60.7	2.9	0.0	0.0	2.1	11.8	1.7	8.4	0.0	0.0	40.1
6/12/2012	103.7	0.6	0.0	69.1	2.9	0.0	0.0	17.4	11.8	3.1	8.4	0.0	0.0	135.7
6/13/2012	65.9	0.1	0.0	74.9	2.9	0.0	48.5	62.8	11.8	13.9	8.4	0.0	0.0	-1.5
6/14/2012	0.0	1.2	0.0	74.0	2.9	0.0	9.4	10.7	11.8	10.3	8.4	0.0	0.0	27.6
6/15/2012	0.0	2.0	0.0	47.9	2.9	0.0	0.0	0.5	11.8	0.4	8.4	0.0	0.0	31.8
6/16/2012	0.0	1.2	0.0	34.4	2.9	0.0	0.0	0.0	11.8	0.0	8.4	0.0	0.0	18.4
6/17/2012	0.0	1.6	0.0	42.5	2.9	0.0	0.0	0.0	11.8	0.0	8.4	0.0	0.0	26.9
6/18/2012	44.4	2.9	0.0	32.8	2.9	0.0	0.0	2.2	11.8	0.1	8.4	0.0	0.0	60.7
6/19/2012	488.6	0.9	0.0	31.7	2.9	0.0	90.8	138.8	11.8	11.6	8.4	0.0	0.0	262.8
6/20/2012	303.2	1.0	0.0	30.3	2.9	0.0	245.4	145.2	11.8	14.1	8.4	0.0	0.0	-87.6
6/21/2012	278.0	0.4	0.0	34.1	2.9	0.0	150.0	120.2	11.8	14.1	8.4	0.0	0.0	11.0
6/22/2012	283.9	0.3	0.0	29.8	2.9	0.0	149.1	124.2	11.8	14.1	8.4	0.0	0.0	9.3
6/23/2012	214.0	1.0	0.0	32.5	2.9	0.0	137.6	106.0	11.8	14.1	8.4	0.0	0.0	-27.4
6/24/2012	162.0	1.1	0.0	28.3	2.9	0.0	93.6	85.3	11.8	14.1	8.4	0.0	0.0	-18.8
6/25/2012	88.8	0.6	0.0	29.3	2.9	0.0	59.0	63.6	11.8	14.1	8.4	0.0	0.0	-35.2
6/26/2012	35.0	0.6	0.0	27.4	2.9	0.0	14.4	42.7	11.8	14.1	8.4	0.0	0.0	-25.4
6/27/2012	39.7	2.4	0.0	31.6	2.9	0.0	0.0	29.4	11.8	10.2	8.4	0.0	0.0	16.9
6/28/2012	52.0	1.7	0.0	29.8	2.9	0.0	0.0	30.8	11.8	10.4	8.4	0.0	0.0	25.1
6/29/2012	64.2	3.0	0.0	15.7	2.9	0.0	0.0	44.3	11.8	11.9	8.4	0.0	0.0	9.6
6/30/2012	63.2	1.8	0.0	8.5	2.9	0.0	3.9	46.3	11.8	14.3	8.4	0.0	0.0	-8.2
7/1/2012	92.4	1.0	0.0	17.6	2.9	0.0	1.3	52.9	11.8	12.4	8.4	0.0	0.0	27.1
7/2/2012	472.1	3.1	0.0	20.1	2.9	0.0	29.9	101.8	11.8	12.4	8.4	0.0	0.0	334.0
7/3/2012	1261.2	0.8	0.0	25.1	2.9	0.0	675.9	269.5	11.8	12.4	8.4	0.0	0.0	312.0

Table G5-3: RGCP Channel Water Budget Equation Analysis Segment 3 — Normal Single Pulse Hydrograph, Scenario S2 — (Units = Acre-Feet)

	Segment 3 - Mesilla Dam to Anthony Metering Station (Lower Reach A)													
	Qcus	Pc	Qcin	Qirf	Qeff	Qgwrf	Qcds	Qcs	Qfpr	ET	ET	Qda	Qdu	Δsic
Date	Upstream Channel Inflow, below Mesilla Dam	Precipitation Flows in River Channel	In-channel Stormwater/ Ungaged Return Inflow	Irrigation Return Flow (Del Rio Drain)	Treated Effluent Return Flow	Groundwater Return Flow	Downstream Channel Outflow, below Anthony Station	Channel Seepage	Floodplain Recharge	Open Water Channel Evaporation	Riparian Evapo-transpiration	Diversions Authorized (None)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
7/4/2012	1385.0	1.3	0.0	32.9	2.9	0.0	1040.6	288.8	11.8	12.4	8.4	0.0	0.0	60.3
7/5/2012	1516.1	3.2	0.0	36.4	2.9	0.0	1162.5	292.8	11.8	12.4	8.4	0.0	0.0	70.8
7/6/2012	1618.0	0.8	0.0	44.2	2.9	0.0	1284.4	294.3	11.8	12.4	8.4	0.0	0.0	54.7
7/7/2012	1767.6	1.2	0.0	34.3	2.9	0.0	1386.9	295.4	11.8	12.4	8.4	0.0	0.0	91.1
7/8/2012	1941.7	1.4	0.0	67.6	2.9	0.0	1598.2	297.8	11.8	12.4	8.4	0.0	0.0	85.0
7/9/2012	2038.2	4.0	0.0	53.5	2.9	0.0	1689.2	298.9	11.8	12.4	8.4	0.0	0.0	77.9
7/10/2012	2123.8	3.1	0.0	39.0	2.9	0.0	1800.8	299.1	11.8	12.4	8.4	0.0	0.0	36.3
7/11/2012	2143.0	1.9	0.0	33.6	2.9	0.0	1822.2	299.1	11.8	12.4	8.4	0.0	0.0	27.5
7/12/2012	2180.5	1.1	0.0	13.1	2.9	0.0	1859.8	299.9	11.8	12.4	8.4	0.0	0.0	5.4
7/13/2012	2190.0	1.3	0.0	7.4	2.9	0.0	1877.7	300.0	11.8	12.4	8.4	0.0	0.0	-8.6
7/14/2012	2172.0	1.0	0.0	6.5	2.9	0.0	1868.0	300.0	11.8	12.4	8.4	0.0	0.0	-18.0
7/15/2012	2139.5	2.2	0.0	3.1	2.9	0.0	1837.0	298.5	11.8	12.4	8.4	0.0	0.0	-20.3
7/16/2012	1768.0	1.3	0.0	6.6	2.9	0.0	1660.1	298.5	11.8	12.4	8.4	0.0	0.0	-212.4
7/17/2012	1098.3	4.2	0.0	10.2	2.9	0.0	990.4	284.3	11.8	12.4	8.4	0.0	0.0	-191.8
7/18/2012	846.9	1.2	0.0	36.5	2.9	0.0	682.6	267.5	11.8	12.4	8.4	0.0	0.0	-95.2
7/19/2012	641.2	1.7	0.0	55.6	2.9	0.0	480.8	233.8	11.8	12.4	8.4	0.0	0.0	-45.8
7/20/2012	482.3	1.6	0.0	43.7	2.9	0.0	372.8	204.0	11.8	12.4	8.4	0.0	0.0	-78.8
7/21/2012	291.8	3.2	0.0	36.5	2.9	0.0	230.1	142.8	11.8	12.4	8.4	0.0	0.0	-71.1
7/22/2012	183.4	1.3	0.0	34.9	2.9	0.0	135.2	100.8	11.8	12.4	8.4	0.0	0.0	-46.0
7/23/2012	158.2	3.0	0.0	35.9	2.9	0.0	71.8	77.7	11.8	12.4	8.4	0.0	0.0	18.1
7/24/2012	420.3	1.0	0.0	41.3	2.9	0.0	83.1	121.8	11.8	12.4	8.4	0.0	0.0	228.0
7/25/2012	760.8	1.3	0.0	63.2	2.9	0.0	363.8	226.5	11.8	12.4	8.4	0.0	0.0	205.4
7/26/2012	712.7	3.0	0.0	62.1	2.9	0.0	540.0	245.8	11.8	12.4	8.4	0.0	0.0	-37.7
7/27/2012	197.5	1.3	80.1	56.2	2.9	0.0	336.6	144.4	11.8	12.4	8.4	0.0	0.0	-175.7
7/28/2012	24.0	2.1	0.0	48.8	2.9	0.0	47.5	37.4	11.8	12.5	8.4	0.0	0.0	-39.9
7/29/2012	21.7	4.4	0.0	46.3	2.9	0.0	0.0	19.9	11.8	7.2	8.4	0.0	0.0	28.1
7/30/2012	0.0	1.9	0.0	38.1	2.9	0.0	0.0	6.9	11.8	5.7	8.4	0.0	0.0	10.2
7/31/2012	3.9	0.8	0.0	32.6	2.9	0.0	0.0	1.5	11.8	0.8	8.4	0.0	0.0	17.7
8/1/2012	286.2	4.4	0.0	38.1	2.9	0.0	0.0	55.1	11.8	5.7	8.4	0.0	0.0	250.7
8/2/2012	579.3	4.2	0.0	50.1	2.9	0.0	242.1	196.2	11.8	12.1	8.4	0.0	0.0	166.0
8/3/2012	360.9	3.1	0.0	35.5	2.9	0.0	329.6	177.2	11.8	12.1	8.4	0.0	0.0	-136.7
8/4/2012	104.0	1.2	19.4	18.0	2.9	0.0	144.2	83.9	11.8	12.1	8.4	0.0	0.0	-114.9
8/5/2012	61.4	2.7	0.0	14.8	2.9	0.0	18.0	50.9	11.8	12.1	8.4	0.0	0.0	-19.4
8/6/2012	72.6	2.4	0.0	12.9	2.9	0.0	1.8	49.8	11.8	12.2	8.4	0.0	0.0	6.9
8/7/2012	85.1	3.0	0.0	13.0	2.9	0.0	8.8	55.2	11.8	12.1	8.4	0.0	0.0	7.8
8/8/2012	94.5	0.9	0.0	28.5	2.9	0.0	17.5	57.3	11.8	12.1	8.4	0.0	0.0	19.8
8/9/2012	125.3	3.2	0.0	38.6	2.9	0.0	26.6	62.6	11.8	12.1	8.4	0.0	0.0	48.6
8/10/2012	161.0	2.3	0.0	26.2	2.9	0.0	53.3	75.8	11.8	12.1	8.4	0.0	0.0	31.1
8/11/2012	130.0	3.2	0.0	19.3	2.9	0.0	70.7	76.0	11.8	12.1	8.4	0.0	0.0	-23.5
8/12/2012	75.7	4.2	0.0	43.4	2.9	0.0	36.6	56.9	11.8	12.1	8.4	0.0	0.0	0.5
8/13/2012	93.1	2.8	0.0	43.0	2.9	0.0	10.3	55.9	11.8	12.1	8.4	0.0	0.0	43.4
8/14/2012	60.5	6.8	0.0	41.5	2.9	0.0	23.7	52.4	11.8	12.1	8.4	0.0	0.0	3.3
8/15/2012	2.0	4.3	0.0	38.7	2.9	0.0	2.8	25.5	11.8	12.5	8.4	0.0	0.0	-13.0
8/16/2012	143.4	1.6	0.0	61.8	2.9	0.0	0.0	21.0	11.8	3.9	8.4	0.0	0.0	164.6
8/17/2012	547.2	2.9	0.0	68.0	2.9	0.0	132.7	160.8	11.8	12.0	8.4	0.0	0.0	295.4
8/18/2012	605.7	2.1	0.0	61.3	2.9	0.0	374.6	210.8	11.8	12.1	8.4	0.0	0.0	54.4
8/19/2012	595.8	2.2	0.0	58.3	2.9	0.0	379.0	210.8	11.8	12.1	8.4	0.0	0.0	37.1
8/20/2012	589.0	5.3	0.0	61.7	2.9	0.0	370.5	210.3	11.8	12.1	8.4	0.0	0.0	45.9
8/21/2012	618.1	1.1	0.0	62.4	2.9	0.0	369.1	212.1	11.8	12.1	8.4	0.0	0.0	71.1
8/22/2012	676.9	4.5	0.0	65.1	2.9	0.0	410.4	222.3	11.8	12.1	8.4	0.0	0.0	84.5

Table G5-3: RGCP Channel Water Budget Equation Analysis Segment 3 — Normal Single Pulse Hydrograph, Scenario S2 — (Units = Acre-Feet)

	Segment 3 - Mesilla Dam to Anthony Metering Station (Lower Reach A)													
	Qcus	Pc	Qcin	Qirf	Qeff	Qgwrf	Qcds	Qcs	Qfpr	ET	ET	Qda	Qdu	Δsic
Date	Upstream Channel Inflow, below Mesilla Dam	Precipitation Flows in River Channel	In-channel Stormwater/ Ungaged Return Inflow	Irrigation Return Flow (Del Rio Drain)	Treated Effluent Return Flow	Groundwater Return Flow	Downstream Channel Outflow, below Anthony Station	Channel Seepage	Floodplain Recharge	Open Water Channel Evaporation	Riparian Evapo-transpiration	Diversions Authorized (None)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
8/23/2012	684.9	3.2	0.0	58.2	2.9	0.0	450.5	227.3	11.8	12.1	8.4	0.0	0.0	39.1
8/24/2012	663.9	2.3	0.0	64.9	2.9	0.0	436.1	223.3	11.8	12.1	8.4	0.0	0.0	42.5
8/25/2012	663.6	3.7	0.0	49.6	2.9	0.0	428.8	223.4	11.8	12.1	8.4	0.0	0.0	35.4
8/26/2012	675.4	1.8	0.0	32.4	2.9	0.0	428.6	225.8	11.8	12.1	8.4	0.0	0.0	25.9
8/27/2012	690.7	3.7	0.0	34.6	2.9	0.0	443.0	229.7	11.8	12.1	8.4	0.0	0.0	27.0
8/28/2012	661.5	1.8	0.0	29.3	2.9	0.0	445.9	227.0	11.8	12.1	8.4	0.0	0.0	-9.6
8/29/2012	619.5	0.8	0.0	28.2	2.9	0.0	408.5	216.0	11.8	12.1	8.4	0.0	0.0	-5.3
8/30/2012	597.6	3.1	0.0	20.9	2.9	0.0	388.5	210.8	11.8	12.1	8.4	0.0	0.0	-7.0
8/31/2012	579.9	2.4	0.0	17.2	2.9	0.0	368.9	206.1	11.8	12.1	8.4	0.0	0.0	-4.8
9/1/2012	582.3	0.6	0.0	17.2	2.9	0.0	362.6	206.4	11.8	10.3	8.4	0.0	0.0	3.6
9/2/2012	591.4	3.1	0.0	16.6	2.9	0.0	367.4	209.6	11.8	10.3	8.4	0.0	0.0	6.5
9/3/2012	595.1	1.8	0.0	16.7	2.9	0.0	372.6	211.1	11.8	10.3	8.4	0.0	0.0	2.4
9/4/2012	624.6	3.1	0.0	17.1	2.9	0.0	376.8	214.1	11.8	10.3	8.4	0.0	0.0	26.4
9/5/2012	761.8	2.6	0.0	20.6	2.9	0.0	425.6	230.7	11.8	10.3	8.4	0.0	0.0	101.1
9/6/2012	929.4	3.4	0.0	24.8	2.9	0.0	588.3	260.3	11.8	10.3	8.4	0.0	0.0	81.5
9/7/2012	976.5	3.6	0.0	23.6	2.9	0.0	689.1	269.3	11.8	10.3	8.4	0.0	0.0	17.7
9/8/2012	867.1	1.3	0.0	33.4	2.9	0.0	667.8	264.3	11.8	10.3	8.4	0.0	0.0	-57.8
9/9/2012	670.3	1.3	0.0	43.5	2.9	0.0	519.2	237.5	11.8	10.3	8.4	0.0	0.0	-69.1
9/10/2012	480.9	1.6	0.0	28.2	2.9	0.0	383.2	199.1	11.8	10.3	8.4	0.0	0.0	-99.1
9/11/2012	343.6	2.0	0.0	24.3	2.9	0.0	244.9	151.5	11.8	10.3	8.4	0.0	0.0	-54.0
9/12/2012	496.2	3.7	0.0	20.3	2.9	0.0	195.0	159.4	11.8	10.3	8.4	0.0	0.0	138.4
9/13/2012	829.8	1.9	0.0	17.1	2.9	0.0	404.8	233.0	11.8	10.3	8.4	0.0	0.0	183.4
9/14/2012	0.0	2.1	0.0	16.4	2.9	0.0	0.0	117.5	11.8	5.2	8.4	0.0	0.0	-121.4

RGCP - Project Scale Water Budget - Segment 3 (Mesilla Dam to Anthony Metering Station)

ΔSic = (Qus + Pc + Qcin + Qirf + Qgwrf) - (Qcds + Qcs + Qfpr + ET + Qda + Qdu)

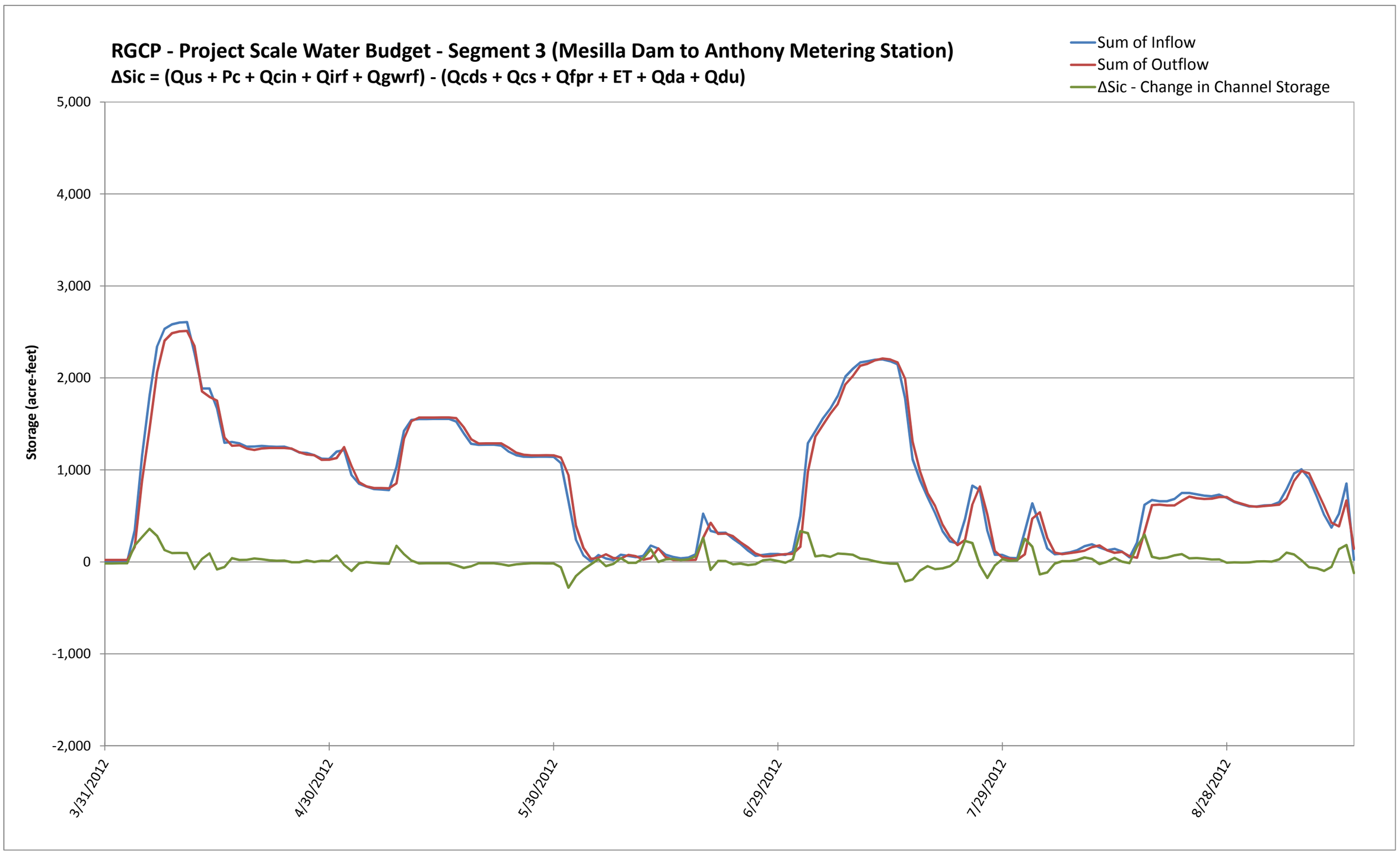


Table G5-4: RGCP Channel Water Budget Equation Analysis Segment 4 — Normal Single Pulse Hydrograph, Scenario S2 — (Units = Acre-Feet)

	Segment 4 - Anthony Metering Station to American Dam (Lower Reach B)													
	Qcus	Pc	Qcin	Qirf	Qeff	Qgwrf	Qcds	Qcs	Qfpr	ET	ET	Qda	Qdu	Δsic
Date	Upstream Channel Inflow, below Anthony Station	Precipitation Flows in River Channel	In-channel Stormwater/ Ungaged Return Inflow	Irrigation Return Flow (Nemexas Drain, East Drain, and West Drain)	Treated Effluent Return Flow	Groundwater Return Flow	Downstream Channel Outflow, at American Dam	Channel Seepage	Floodplain Recharge	Open Water Channel Evaporation	Riparian Evapo-transpiration	Diversions Authorized (None)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
3/31/2012	0.0	0.1	0.0	17.6	33.0	0.0	27.8	0.0	6.4	0.0	7.2	0.0	0.0	9.2
4/1/2012	0.0	0.2	0.0	17.8	33.0	0.0	27.8	0.0	6.4	0.0	7.2	0.0	0.0	9.7
4/2/2012	0.0	0.2	0.0	18.5	33.0	0.0	27.8	0.0	6.4	0.0	7.2	0.0	0.0	10.4
4/3/2012	0.0	0.1	0.0	18.5	33.0	0.0	27.8	0.0	6.4	0.0	7.2	0.0	0.0	10.2
4/4/2012	0.0	0.3	0.0	18.9	33.0	0.0	27.8	0.0	6.4	0.0	7.2	0.0	0.0	10.8
4/5/2012	53.6	0.9	0.0	19.5	33.0	0.0	27.8	23.7	6.4	0.5	7.2	0.0	0.0	41.4
4/6/2012	388.0	0.6	0.0	19.6	33.0	0.0	27.8	250.9	6.4	5.4	7.2	0.0	0.0	143.5
4/7/2012	1172.1	0.3	0.0	19.9	33.0	0.0	96.2	736.5	6.4	8.3	7.2	0.0	0.0	370.6
4/8/2012	1837.1	0.0	0.0	20.2	33.0	0.0	656.6	877.1	6.4	8.3	7.2	0.0	0.0	334.7
4/9/2012	2096.5	0.0	0.0	18.7	33.0	0.0	1646.3	379.6	6.4	8.3	7.2	0.0	0.0	100.3
4/10/2012	2153.1	0.4	0.0	16.2	33.0	0.0	2045.0	110.7	6.4	8.3	7.2	0.0	0.0	25.1
4/11/2012	2166.7	1.0	0.0	16.3	33.0	0.0	2122.0	60.2	6.4	8.3	7.2	0.0	0.0	12.9
4/12/2012	2006.0	0.3	21.3	16.1	33.0	0.0	2076.4	51.1	6.4	8.3	7.2	0.0	0.0	-72.7
4/13/2012	1516.0	0.2	21.7	16.3	33.0	0.0	1587.0	48.8	6.4	8.3	7.2	0.0	0.0	-70.5
4/14/2012	1458.9	0.7	0.0	16.5	33.0	0.0	1430.3	47.9	6.4	8.3	7.2	0.0	0.0	8.9
4/15/2012	1420.6	0.2	0.0	15.9	33.0	0.0	1440.7	47.2	6.4	8.3	7.2	0.0	0.0	-40.1
4/16/2012	1028.8	0.1	70.0	15.9	33.0	0.0	1147.8	45.1	6.4	8.3	7.2	0.0	0.0	-67.0
4/17/2012	941.2	0.2	0.0	16.2	33.0	0.0	912.9	43.5	6.4	8.3	7.2	0.0	0.0	12.2
4/18/2012	946.2	0.1	0.0	16.4	33.0	0.0	925.4	43.6	6.4	8.3	7.2	0.0	0.0	4.8
4/19/2012	911.9	0.2	0.0	16.7	33.0	0.0	903.2	43.1	6.4	8.3	7.2	0.0	0.0	-6.4
4/20/2012	898.8	0.2	0.0	16.9	33.0	0.0	877.2	42.7	6.4	8.3	7.2	0.0	0.0	7.1
4/21/2012	914.3	0.6	0.0	16.7	33.0	0.0	883.7	42.9	6.4	8.3	7.2	0.0	0.0	16.1
4/22/2012	918.9	0.5	0.0	17.3	33.0	0.0	894.0	43.1	6.4	8.3	7.2	0.0	0.0	10.7
4/23/2012	920.2	1.1	0.0	18.9	33.0	0.0	896.2	43.1	6.4	8.3	7.2	0.0	0.0	11.9
4/24/2012	920.4	1.3	0.0	21.3	33.0	0.0	896.4	43.1	6.4	8.3	7.2	0.0	0.0	14.6
4/25/2012	915.1	0.1	0.0	17.6	33.0	0.0	897.4	43.1	6.4	8.3	7.2	0.0	0.0	3.4
4/26/2012	878.1	0.2	0.0	17.9	33.0	0.0	872.5	42.5	6.4	8.3	7.2	0.0	0.0	-7.7
4/27/2012	853.8	0.1	0.0	21.3	33.0	0.0	840.1	41.8	6.4	8.3	7.2	0.0	0.0	4.2
4/28/2012	845.0	0.4	0.0	24.1	33.0	0.0	828.6	41.5	6.4	8.3	7.2	0.0	0.0	10.5
4/29/2012	797.3	0.2	0.0	19.5	33.0	0.0	798.9	40.6	6.4	8.3	7.2	0.0	0.0	-11.4
4/30/2012	799.0	0.2	0.0	19.3	33.0	0.0	778.1	40.3	6.4	8.3	7.2	0.0	0.0	11.2
5/1/2012	813.7	0.6	0.0	18.4	33.0	0.0	768.1	40.5	6.4	10.3	7.2	0.0	0.0	33.1
5/2/2012	928.7	0.5	0.0	18.5	33.0	0.0	862.3	43.2	6.4	10.3	7.2	0.0	0.0	51.3
5/3/2012	736.8	0.2	48.6	18.9	33.0	0.0	837.3	40.6	6.4	10.3	7.2	0.0	0.0	-64.3
5/4/2012	574.8	0.4	0.0	18.9	33.0	0.0	618.5	34.5	6.4	10.3	7.2	0.0	0.0	-49.8
5/5/2012	536.2	0.3	0.0	18.4	33.0	0.0	540.7	32.2	6.4	10.3	7.2	0.0	0.0	-8.9
5/6/2012	521.1	0.9	0.0	17.8	33.0	0.0	513.2	31.0	6.4	10.3	7.2	0.0	0.0	4.7
5/7/2012	521.3	0.1	0.0	17.5	33.0	0.0	507.5	30.8	6.4	10.3	7.2	0.0	0.0	9.7
5/8/2012	518.0	0.5	0.0	17.8	33.0	0.0	507.4	30.7	6.4	10.3	7.2	0.0	0.0	7.3
5/9/2012	560.8	0.6	0.0	18.6	33.0	0.0	502.8	30.9	6.4	10.3	7.2	0.0	0.0	55.4
5/10/2012	1015.9	0.4	0.0	18.6	33.0	0.0	750.8	41.6	6.4	10.3	7.2	0.0	0.0	251.6
5/11/2012	1202.9	0.2	0.0	18.2	33.0	0.0	1126.5	45.8	6.4	10.3	7.2	0.0	0.0	58.0
5/12/2012	1242.4	0.1	0.0	18.1	33.0	0.0	1212.0	46.3	6.4	10.3	7.2	0.0	0.0	11.4
5/13/2012	1242.9	0.2	0.0	18.0	33.0	0.0	1213.7	46.3	6.4	10.3	7.2	0.0	0.0	10.1
5/14/2012	1243.3	0.8	0.0	18.0	33.0	0.0	1214.3	46.3	6.4	10.3	7.2	0.0	0.0	10.6

Table G5-4: RGCP Channel Water Budget Equation Analysis Segment 4 — Normal Single Pulse Hydrograph, Scenario S2 — (Units = Acre-Feet)

	Segment 4 - Anthony Metering Station to American Dam (Lower Reach B)													
	Qcus	Pc	Qcin	Qirf	Qeff	Qgwrf	Qcds	Qcs	Qfpr	ET	ET	Qda	Qdu	Δsic
Date	Upstream Channel Inflow, below Anthony Station	Precipitation Flows in River Channel	In-channel Stormwater/ Ungaged Return Inflow	Irrigation Return Flow (Nemexas Drain, East Drain, and West Drain)	Treated Effluent Return Flow	Groundwater Return Flow	Downstream Channel Outflow, at American Dam	Channel Seepage	Floodplain Recharge	Open Water Channel Evaporation	Riparian Evapo-transpiration	Diversions Authorized (None)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
5/15/2012	1243.6	0.8	0.0	17.5	33.0	0.0	1214.6	46.3	6.4	10.3	7.2	0.0	0.0	10.1
5/16/2012	1243.0	0.7	0.0	17.0	33.0	0.0	1214.5	46.3	6.4	10.3	7.2	0.0	0.0	9.0
5/17/2012	1236.8	1.5	0.0	16.9	33.0	0.0	1213.5	46.3	6.4	10.3	7.2	0.0	0.0	4.5
5/18/2012	1141.6	1.0	0.0	16.7	33.0	0.0	1159.0	45.7	6.4	10.3	7.2	0.0	0.0	-36.3
5/19/2012	1013.6	0.5	0.0	16.7	33.0	0.0	1034.1	44.5	6.4	10.3	7.2	0.0	0.0	-38.6
5/20/2012	969.2	1.2	0.0	16.7	33.0	0.0	946.9	43.8	6.4	10.3	7.2	0.0	0.0	5.5
5/21/2012	970.6	0.4	0.0	16.6	33.0	0.0	943.9	43.8	6.4	10.3	7.2	0.0	0.0	8.9
5/22/2012	971.6	1.5	0.0	16.6	33.0	0.0	944.4	43.9	6.4	10.3	7.2	0.0	0.0	10.4
5/23/2012	972.7	1.1	0.0	16.8	33.0	0.0	946.5	43.9	6.4	10.3	7.2	0.0	0.0	9.3
5/24/2012	926.3	0.4	0.0	17.1	33.0	0.0	928.4	43.3	6.4	10.3	7.2	0.0	0.0	-18.9
5/25/2012	874.4	0.1	0.0	16.8	33.0	0.0	869.0	42.3	6.4	10.3	7.2	0.0	0.0	-10.9
5/26/2012	852.4	0.5	0.0	17.0	33.0	0.0	835.8	41.7	6.4	10.3	7.2	0.0	0.0	1.6
5/27/2012	847.1	1.3	0.0	17.4	33.0	0.0	824.3	41.6	6.4	10.3	7.2	0.0	0.0	9.1
5/28/2012	847.6	0.2	0.0	17.8	33.0	0.0	823.0	41.6	6.4	10.3	7.2	0.0	0.0	10.1
5/29/2012	847.9	0.4	0.0	17.0	33.0	0.0	823.8	41.5	6.4	10.3	7.2	0.0	0.0	9.1
5/30/2012	847.4	0.5	0.0	16.9	33.0	0.0	823.5	41.5	6.4	10.3	7.2	0.0	0.0	8.9
5/31/2012	824.6	0.5	0.0	16.7	33.0	0.0	821.4	41.4	6.4	10.3	7.2	0.0	0.0	-11.9
6/1/2012	660.7	1.2	39.5	16.6	33.0	0.0	749.8	38.3	6.4	12.3	7.2	0.0	0.0	-63.0
6/2/2012	239.5	1.3	194.8	16.4	33.0	0.0	483.7	23.2	6.4	12.3	7.2	0.0	0.0	-47.8
6/3/2012	68.2	0.6	34.9	16.5	33.0	0.0	152.5	9.6	6.4	12.3	7.2	0.0	0.0	-34.9
6/4/2012	0.5	0.5	4.4	16.9	33.0	0.0	54.8	5.0	6.4	12.4	7.2	0.0	0.0	-30.5
6/5/2012	0.0	0.4	0.0	16.6	33.0	0.0	27.2	1.4	6.4	6.7	7.2	0.0	0.0	1.2
6/6/2012	5.8	0.3	0.0	16.6	33.0	0.0	27.4	0.8	6.4	2.4	7.2	0.0	0.0	11.5
6/7/2012	1.4	0.8	0.0	19.3	33.0	0.0	27.7	1.5	6.4	5.4	7.2	0.0	0.0	6.3
6/8/2012	0.0	0.9	0.0	20.7	33.0	0.0	27.7	0.3	6.4	1.7	7.2	0.0	0.0	11.3
6/9/2012	1.1	0.6	0.0	19.1	33.0	0.0	27.7	0.1	6.4	0.2	7.2	0.0	0.0	12.2
6/10/2012	1.1	1.7	0.0	17.1	33.0	0.0	27.8	0.4	6.4	2.1	7.2	0.0	0.0	9.0
6/11/2012	0.0	0.7	0.0	19.0	33.0	0.0	27.8	0.0	6.4	0.2	7.2	0.0	0.0	11.0
6/12/2012	0.0	0.9	0.0	16.8	33.0	0.0	27.8	0.0	6.4	0.0	7.2	0.0	0.0	9.4
6/13/2012	48.5	1.1	0.0	17.0	33.0	0.0	27.8	1.4	6.4	1.8	7.2	0.0	0.0	55.0
6/14/2012	9.4	1.0	0.0	17.6	33.0	0.0	50.8	6.0	6.4	12.1	7.2	0.0	0.0	-21.5
6/15/2012	0.0	1.1	0.0	17.8	33.0	0.0	29.0	2.4	6.4	10.4	7.2	0.0	0.0	-3.5
6/16/2012	0.0	1.6	0.0	18.0	33.0	0.0	27.3	0.6	6.4	2.3	7.2	0.0	0.0	8.8
6/17/2012	0.0	1.8	0.0	18.4	33.0	0.0	27.7	0.2	6.4	1.0	7.2	0.0	0.0	10.6
6/18/2012	0.0	1.1	0.0	20.4	33.0	0.0	27.7	0.1	6.4	0.5	7.2	0.0	0.0	12.6
6/19/2012	90.8	0.9	0.0	18.1	33.0	0.0	27.7	1.1	6.4	0.5	7.2	0.0	0.0	99.9
6/20/2012	245.4	1.8	0.0	16.8	33.0	0.0	182.7	16.5	6.4	11.9	7.2	0.0	0.0	72.2
6/21/2012	150.0	0.8	0.0	16.8	33.0	0.0	194.5	12.3	6.4	12.3	7.2	0.0	0.0	-32.1
6/22/2012	149.1	0.5	0.0	16.8	33.0	0.0	146.4	11.3	6.4	12.3	7.2	0.0	0.0	15.8
6/23/2012	137.6	1.1	0.0	16.7	33.0	0.0	156.7	11.4	6.4	12.3	7.2	0.0	0.0	-5.6
6/24/2012	93.6	0.8	0.0	16.7	33.0	0.0	125.3	9.7	6.4	12.3	7.2	0.0	0.0	-16.8
6/25/2012	59.0	1.5	0.0	16.6	33.0	0.0	90.0	8.5	6.4	12.3	7.2	0.0	0.0	-14.2
6/26/2012	14.4	1.4	0.0	16.4	33.0	0.0	56.7	6.9	6.4	12.3	7.2	0.0	0.0	-24.4
6/27/2012	0.0	2.7	0.0	16.7	33.0	0.0	30.6	3.2	6.4	12.2	7.2	0.0	0.0	-7.3
6/28/2012	0.0	4.2	0.0	17.6	33.0	0.0	27.3	0.7	6.4	3.0	7.2	0.0	0.0	10.3
6/29/2012	0.0	3.8	0.0	16.8	33.0	0.0	27.6	0.3	6.4	1.2	7.2	0.0	0.0	10.9
6/30/2012	3.9	1.8	0.0	16.4	33.0	0.0	27.7	0.8	6.4	2.8	7.2	0.0	0.0	10.2
7/1/2012	1.3	3.8	0.0	16.3	33.0	0.0	27.7	0.4	6.4	2.0	7.2	0.0	0.0	10.8
7/2/2012	29.9	2.0	0.0	16.0	33.0	0.0	27.8	2.2	6.4	3.9	7.2	0.0	0.0	33.4
7/3/2012	675.9	1.5	0.0	15.7	33.0	0.0	142.5	21.2	6.4	9.6	7.2	0.0	0.0	539.2

Table G5-4: RGCP Channel Water Budget Equation Analysis Segment 4 — Normal Single Pulse Hydrograph, Scenario S2 — (Units = Acre-Feet)

	Segment 4 - Anthony Metering Station to American Dam (Lower Reach B)													
	Qcus	Pc	Qcin	Qirf	Qeff	Qgwrf	Qcds	Qcs	Qfpr	ET	ET	Qda	Qdu	Δsic
Date	Upstream Channel Inflow, below Anthony Station	Precipitation Flows in River Channel	In-channel Stormwater/ Ungaged Return Inflow	Irrigation Return Flow (Nemexas Drain, East Drain, and West Drain)	Treated Effluent Return Flow	Groundwater Return Flow	Downstream Channel Outflow, at American Dam	Channel Seepage	Floodplain Recharge	Open Water Channel Evaporation	Riparian Evapo-transpiration	Diversions Authorized (None)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
7/4/2012	1040.6	4.4	0.0	15.9	33.0	0.0	961.0	43.9	6.4	10.8	7.2	0.0	0.0	64.6
7/5/2012	1162.5	2.8	0.0	16.5	33.0	0.0	1084.9	45.2	6.4	10.8	7.2	0.0	0.0	60.3
7/6/2012	1284.4	3.8	0.0	16.9	33.0	0.0	1218.2	45.8	6.4	10.8	7.2	0.0	0.0	49.7
7/7/2012	1386.9	2.2	0.0	17.1	33.0	0.0	1308.8	46.0	6.4	10.8	7.2	0.0	0.0	60.1
7/8/2012	1598.2	3.6	0.0	17.3	33.0	0.0	1515.2	46.6	6.4	10.8	7.2	0.0	0.0	65.9
7/9/2012	1689.2	2.6	0.0	17.9	33.0	0.0	1630.6	46.8	6.4	10.8	7.2	0.0	0.0	40.9
7/10/2012	1800.8	2.4	0.0	17.4	33.0	0.0	1746.6	46.9	6.4	10.8	7.2	0.0	0.0	35.7
7/11/2012	1822.2	2.1	0.0	17.5	33.0	0.0	1787.1	46.8	6.4	10.8	7.2	0.0	0.0	16.6
7/12/2012	1859.8	2.4	0.0	17.5	33.0	0.0	1819.3	46.6	6.4	10.8	7.2	0.0	0.0	22.3
7/13/2012	1877.7	2.8	0.0	17.5	33.0	0.0	1845.5	46.5	6.4	10.8	7.2	0.0	0.0	14.6
7/14/2012	1868.0	3.3	0.0	17.5	33.0	0.0	1843.3	47.2	6.4	10.8	7.2	0.0	0.0	6.9
7/15/2012	1837.0	3.3	0.0	17.4	33.0	0.0	1815.2	48.4	6.4	10.8	7.2	0.0	0.0	2.7
7/16/2012	1660.1	1.9	32.8	17.4	33.0	0.0	1743.4	47.7	6.4	10.8	7.2	0.0	0.0	-70.2
7/17/2012	990.4	2.7	158.7	16.4	33.0	0.0	1198.6	45.0	6.4	10.8	7.2	0.0	0.0	-66.7
7/18/2012	682.6	2.2	24.9	15.7	33.0	0.0	756.2	38.9	6.4	10.8	7.2	0.0	0.0	-61.1
7/19/2012	480.8	1.8	49.3	15.6	33.0	0.0	578.7	31.7	6.4	10.8	7.2	0.0	0.0	-54.3
7/20/2012	372.8	2.9	0.0	15.4	33.0	0.0	416.7	25.2	6.4	10.8	7.2	0.0	0.0	-42.2
7/21/2012	230.1	2.5	43.2	16.8	33.0	0.0	323.1	19.2	6.4	10.8	7.2	0.0	0.0	-41.1
7/22/2012	135.2	2.8	3.9	17.5	33.0	0.0	189.6	12.2	6.4	10.8	7.2	0.0	0.0	-33.8
7/23/2012	71.8	3.0	0.0	17.1	33.0	0.0	115.9	9.2	6.4	10.8	7.2	0.0	0.0	-24.6
7/24/2012	83.1	3.1	0.0	17.3	33.0	0.0	74.2	8.4	6.4	10.8	7.2	0.0	0.0	29.5
7/25/2012	363.8	1.4	0.0	17.1	33.0	0.0	153.3	17.2	6.4	10.8	7.2	0.0	0.0	220.3
7/26/2012	540.0	4.6	0.0	17.2	33.0	0.0	456.4	29.6	6.4	10.8	7.2	0.0	0.0	84.3
7/27/2012	336.6	3.2	111.4	17.0	33.0	0.0	498.0	25.7	6.4	10.8	7.2	0.0	0.0	-46.9
7/28/2012	47.5	3.4	114.1	17.3	33.0	0.0	211.9	10.8	6.4	10.8	7.2	0.0	0.0	-31.8
7/29/2012	0.0	3.2	0.0	16.8	33.0	0.0	41.9	3.8	6.4	10.7	7.2	0.0	0.0	-17.0
7/30/2012	0.0	2.8	0.0	17.9	33.0	0.0	27.2	1.0	6.4	4.5	7.2	0.0	0.0	7.4
7/31/2012	0.0	2.1	0.0	17.3	33.0	0.0	27.4	0.3	6.4	1.4	7.2	0.0	0.0	9.7
8/1/2012	0.0	4.1	0.0	17.4	33.0	0.0	27.7	0.2	6.4	0.6	7.2	0.0	0.0	12.4
8/2/2012	242.1	3.3	0.0	17.3	33.0	0.0	39.4	8.3	6.4	6.2	7.2	0.0	0.0	228.3
8/3/2012	329.6	1.8	0.0	17.7	33.0	0.0	330.1	22.8	6.4	10.5	7.2	0.0	0.0	5.0
8/4/2012	144.2	3.2	70.1	20.7	33.0	0.0	268.0	15.3	6.4	10.5	7.2	0.0	0.0	-36.2
8/5/2012	18.0	2.3	25.3	19.5	33.0	0.0	95.9	7.6	6.4	10.5	7.2	0.0	0.0	-29.4
8/6/2012	1.8	2.8	0.0	19.7	33.0	0.0	32.2	4.2	6.4	10.8	7.2	0.0	0.0	-3.4
8/7/2012	8.8	3.1	0.0	18.9	33.0	0.0	27.2	1.8	6.4	5.8	7.2	0.0	0.0	15.3
8/8/2012	17.5	2.6	0.0	18.7	33.0	0.0	27.3	3.4	6.4	6.7	7.2	0.0	0.0	20.8
8/9/2012	26.6	2.0	0.0	18.2	33.0	0.0	27.7	5.4	6.4	9.0	7.2	0.0	0.0	24.1
8/10/2012	53.3	3.4	0.0	18.7	33.0	0.0	36.4	7.0	6.4	10.5	7.2	0.0	0.0	40.9
8/11/2012	70.7	3.2	0.0	19.3	33.0	0.0	69.5	8.1	6.4	10.5	7.2	0.0	0.0	24.5
8/12/2012	36.6	5.4	0.0	22.9	33.0	0.0	76.8	7.6	6.4	10.5	7.2	0.0	0.0	-10.6
8/13/2012	10.3	3.9	0.0	18.7	33.0	0.0	41.6	5.8	6.4	10.5	7.2	0.0	0.0	-5.7
8/14/2012	23.7	3.7	0.0	18.7	33.0	0.0	27.3	5.1	6.4	10.3	7.2	0.0	0.0	22.8
8/15/2012	2.8	2.1	0.0	18.5	33.0	0.0	30.9	5.2	6.4	10.6	7.2	0.0	0.0	-3.9
8/16/2012	0.0	3.4	0.0	19.5	33.0	0.0	27.4	1.9	6.4	8.5	7.2	0.0	0.0	4.5
8/17/2012	132.7	3.1	0.0	18.8	33.0	0.0	27.3	3.4	6.4	4.0	7.2	0.0	0.0	139.3
8/18/2012	374.6	2.7	0.0	21.8	33.0	0.0	241.9	20.4	6.4	10.5	7.2	0.0	0.0	145.7
8/19/2012	379.0	5.0	0.0	21.1	33.0	0.0	376.9	23.1	6.4	10.5	7.2	0.0	0.0	14.0
8/20/2012	370.5	1.9	0.0	22.0	33.0	0.0	369.7	22.8	6.4	10.5	7.2	0.0	0.0	10.8
8/21/2012	369.1	1.5	0.0	21.5	33.0	0.0	362.6	22.6	6.4	10.5	7.2	0.0	0.0	15.8
8/22/2012	410.4	1.8	0.0	20.0	33.0	0.0	375.1	23.8	6.4	10.5	7.2	0.0	0.0	42.2

Table G5-4: RGCP Channel Water Budget Equation Analysis Segment 4 — Normal Single Pulse Hydrograph, Scenario S2 — (Units = Acre-Feet)

	Segment 4 - Anthony Metering Station to American Dam (Lower Reach B)													
	Qcus	Pc	Qcin	Qirf	Qeff	Qgwrf	Qcds	Qcs	Qfpr	ET	ET	Qda	Qdu	Δsic
Date	Upstream Channel Inflow, below Anthony Station	Precipitation Flows in River Channel	In-channel Stormwater/ Ungaged Return Inflow	Irrigation Return Flow (Nemexas Drain, East Drain, and West Drain)	Treated Effluent Return Flow	Groundwater Return Flow	Downstream Channel Outflow, at American Dam	Channel Seepage	Floodplain Recharge	Open Water Channel Evaporation	Riparian Evapo-transpiration	Diversions Authorized (None)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
8/23/2012	450.5	3.8	0.0	19.4	33.0	0.0	421.7	25.8	6.4	10.5	7.2	0.0	0.0	35.1
8/24/2012	436.1	2.3	0.0	19.6	33.0	0.0	441.6	25.9	6.4	10.5	7.2	0.0	0.0	-0.6
8/25/2012	428.8	1.0	0.0	19.9	33.0	0.0	422.2	25.3	6.4	10.5	7.2	0.0	0.0	11.0
8/26/2012	428.6	2.5	0.0	19.6	33.0	0.0	420.2	25.2	6.4	10.5	7.2	0.0	0.0	14.1
8/27/2012	443.0	0.9	0.0	19.8	33.0	0.0	424.8	25.7	6.4	10.5	7.2	0.0	0.0	22.1
8/28/2012	445.9	1.2	0.0	19.6	33.0	0.0	438.1	26.1	6.4	10.5	7.2	0.0	0.0	11.3
8/29/2012	408.5	2.2	0.0	19.5	33.0	0.0	426.0	25.0	6.4	10.5	7.2	0.0	0.0	-11.9
8/30/2012	388.5	1.3	0.0	19.3	33.0	0.0	390.5	23.8	6.4	10.5	7.2	0.0	0.0	3.7
8/31/2012	368.9	3.0	0.0	19.6	33.0	0.0	375.0	23.0	6.4	10.5	7.2	0.0	0.0	2.3
9/1/2012	362.6	2.2	0.0	22.1	33.0	0.0	359.7	22.6	6.4	8.9	7.2	0.0	0.0	15.1
9/2/2012	367.4	3.4	0.0	23.7	33.0	0.0	359.8	22.7	6.4	8.9	7.2	0.0	0.0	22.4
9/3/2012	372.6	2.1	0.0	22.1	33.0	0.0	365.8	23.0	6.4	8.9	7.2	0.0	0.0	18.5
9/4/2012	376.8	2.5	0.0	22.8	33.0	0.0	369.1	23.1	6.4	8.9	7.2	0.0	0.0	20.3
9/5/2012	425.6	5.3	0.0	25.1	33.0	0.0	383.4	24.4	6.4	8.9	7.2	0.0	0.0	58.7
9/6/2012	588.3	3.6	0.0	23.3	33.0	0.0	470.0	30.2	6.4	8.9	7.2	0.0	0.0	125.5
9/7/2012	689.1	3.0	0.0	22.5	33.0	0.0	633.5	35.7	6.4	8.9	7.2	0.0	0.0	55.8
9/8/2012	667.8	2.5	0.0	25.5	33.0	0.0	678.1	36.1	6.4	8.9	7.2	0.0	0.0	-7.8
9/9/2012	519.2	0.8	21.7	21.6	33.0	0.0	595.4	31.8	6.4	8.9	7.2	0.0	0.0	-53.5
9/10/2012	383.2	3.6	17.6	21.1	33.0	0.0	454.9	25.3	6.4	8.9	7.2	0.0	0.0	-44.2
9/11/2012	244.9	4.9	27.8	20.7	33.0	0.0	326.5	18.9	6.4	8.9	7.2	0.0	0.0	-36.5
9/12/2012	195.0	3.0	0.0	20.6	33.0	0.0	217.1	13.8	6.4	8.9	7.2	0.0	0.0	-1.9
9/13/2012	404.8	1.9	0.0	20.4	33.0	0.0	240.6	20.0	6.4	8.9	7.2	0.0	0.0	177.0
9/14/2012	0.0	2.2	0.0	20.3	33.0	0.0	0.0	10.1	6.4	4.5	7.2	0.0	0.0	27.3

RGCP - Project Scale Water Budget - Segment 4 (Anthony Metering Station to American Dam)

ΔSic = (Qus + Pc + Qcin + Qirf + Qgwrf) - (Qcds + Qcs + Qfpr + ET + Qda + Qdu)

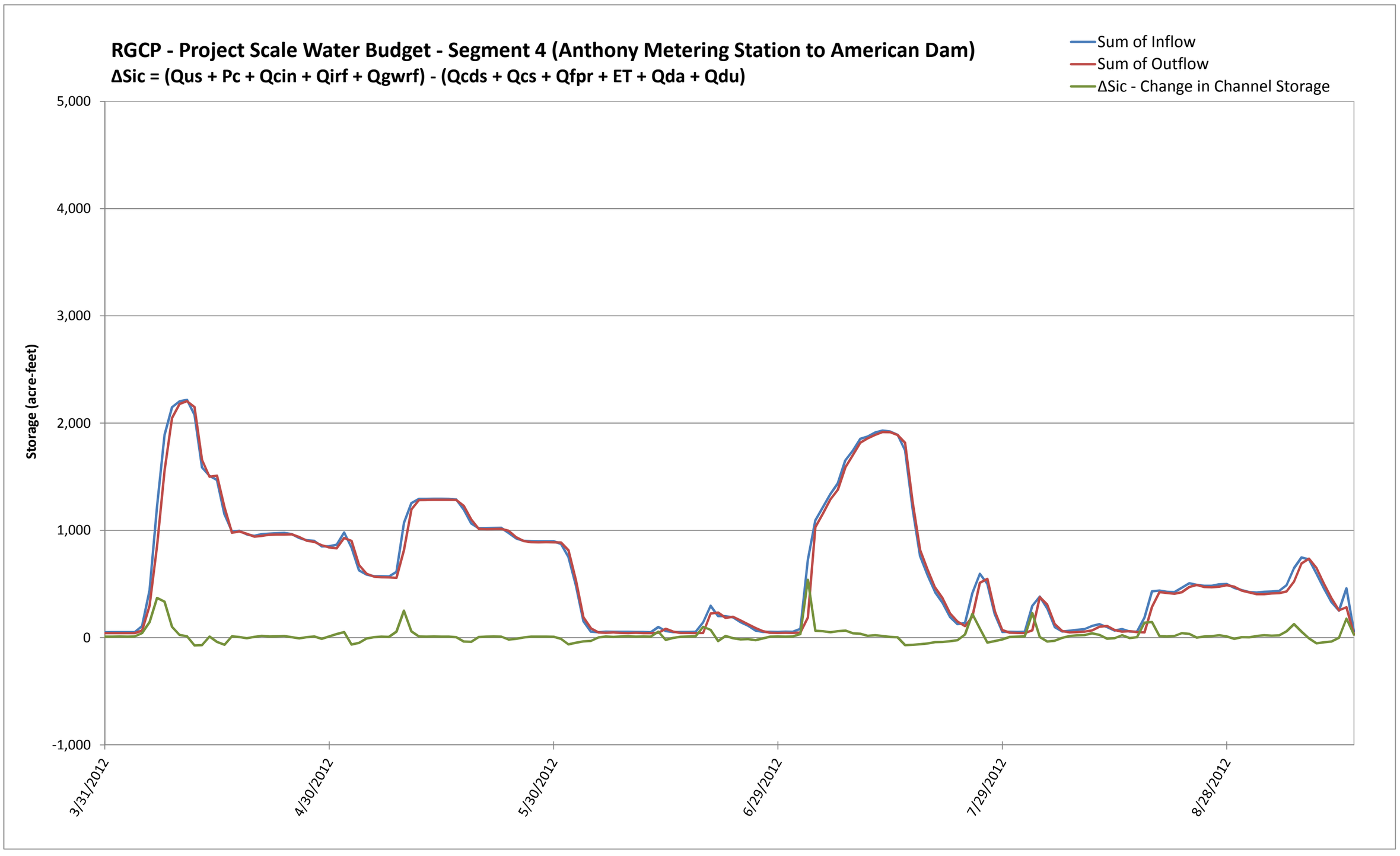


Table G5-5: Local Basin Scale Water Budget Equation

Normal Single Pulse Hydrograph, Scenario S2 (Units = Acre-Feet)

Caballo Reservoir to American Dam

	Surface Water Budget															Groundwater Budget					
	Qus	P	Qp			Qgwrf	Qds			Qgwr				ET	ΔSsw	Qgwus	Qgwr	Qp	Qgwrf	Qgwds	ΔSgw
Date	River Below Caballo Dam	Precipitation Flows in River Channel	Pumping	MODFLOW Groundwater Return Flow to Rio Grande	Measured Irrigation/ Drainage Return Flow	Groundwater Return Flow = Groundwater RF + Irrigation RRF	Downstream Channel Outflow, River above American Dam	Channel Seepage (Qcs)	MODFLOW Floodplain/ Irrigation Based Recharge	Groundwater Recharge = Seepage + Irrigation Based Recharge	Riparian Evapo-transpiration	Crop Evapo-transpiration	Open Water Evaporation	Total ET = Riparian + Crop + Open Water Evaporation	Changes in Surface Water Storage	Upstream Groundwater Inflow	Groundwater Recharge = Seepage + Irrigation Based Recharge	Pumping	Groundwater Return Flow = Groundwater RF + Irrigation RRF	Downstream Groundwater Outflow	Change in Vadose Zone and Groundwater Storage
3/31/2012	0.0	0.3	517.8	31.8	18.5	50.3	27.8	0.0	354.0	354.0	58.1	307.5	0.0	365.6	-178.9	40.6	354.0	517.8	50.3	0.0	-173.5
4/1/2012	991.7	0.5	598.8	31.8	18.7	50.6	27.8	65.7	354.0	419.7	58.1	307.5	5.4	371.0	823.1	40.6	419.7	598.8	50.6	0.0	-189.1
4/2/2012	2975.2	2.2	704.1	31.8	19.5	51.3	27.8	324.2	354.0	678.2	58.1	307.5	18.9	384.5	2642.4	40.6	678.2	704.1	51.3	0.0	-36.6
4/3/2012	2975.2	1.7	747.3	31.8	19.5	51.3	27.8	853.6	354.0	1207.6	58.1	307.5	41.5	407.1	2132.9	40.6	1207.6	747.3	51.3	0.0	449.7
4/4/2012	2975.2	2.4	742.3	31.8	19.8	51.7	27.8	1946.5	354.0	2300.5	58.1	307.5	70.2	435.8	1007.5	40.6	2300.5	742.3	51.7	0.0	1547.2
4/5/2012	2975.2	3.9	750.9	31.8	23.9	55.8	27.8	2388.7	354.0	2742.7	58.1	307.5	87.2	452.8	562.5	40.6	2742.7	750.9	55.8	0.0	1976.7
4/6/2012	2975.2	3.3	785.4	31.8	81.5	113.3	27.8	2290.5	354.0	2644.5	58.1	307.5	96.8	462.4	742.5	40.6	2644.5	785.4	113.3	0.0	1786.5
4/7/2012	2975.2	2.0	781.9	31.8	105.6	137.4	96.2	2192.9	354.0	2546.9	58.1	307.5	102.1	467.7	785.6	40.6	2546.9	781.9	137.4	0.0	1668.2
4/8/2012	2975.2	0.7	786.4	31.8	110.8	142.6	656.6	1893.8	354.0	2247.8	58.1	307.5	102.1	467.7	532.9	40.6	2247.8	786.4	142.6	0.0	1359.4
4/9/2012	2975.2	0.1	795.0	31.8	120.3	152.1	1646.3	1193.2	354.0	1547.2	58.1	307.5	102.1	467.7	261.1	40.6	1547.2	795.0	152.1	0.0	640.7
4/10/2012	2975.2	0.6	845.0	31.8	128.0	159.8	2045.0	879.1	354.0	1233.1	58.1	307.5	102.1	467.7	234.8	40.6	1233.1	845.0	159.8	0.0	269.0
4/11/2012	2975.2	3.9	856.3	31.8	127.1	159.0	2122.0	817.4	354.0	1171.4	58.1	307.5	102.1	467.7	233.3	40.6	1171.4	856.3	159.0	0.0	196.7
4/12/2012	2975.2	3.8	832.7	31.8	124.4	156.2	2076.4	801.2	354.0	1155.2	58.1	307.5	102.1	467.7	268.7	40.6	1155.2	832.7	156.2	0.0	206.9
4/13/2012	2975.2	0.7	823.4	31.8	114.1	146.0	1587.0	791.3	354.0	1145.3	58.1	307.5	102.1	467.7	745.2	40.6	1145.3	823.4	146.0	0.0	216.6
4/14/2012	2380.2	1.2	824.1	31.8	116.0	147.9	1430.3	785.2	354.0	1139.2	58.1	307.5	102.1	467.7	316.1	40.6	1139.2	824.1	147.9	0.0	207.9
4/15/2012	2380.2	3.5	824.2	31.8	66.8	98.6	1440.7	772.6	354.0	1126.6	58.1	307.5	102.1	467.7	271.4	40.6	1126.6	824.2	98.6	0.0	244.4
4/16/2012	2380.2	1.0	823.8	31.8	58.5	90.3	1147.8	755.1	354.0	1109.1	58.1	307.5	102.1	467.7	570.7	40.6	1109.1	823.8	90.3	0.0	235.7
4/17/2012	2380.2	3.1	829.2	31.8	67.0	98.8	912.9	750.1	354.0	1104.1	58.1	307.5	102.1	467.7	826.6	40.6	1104.1	829.2	98.8	0.0	216.7
4/18/2012	2380.2	0.7	830.6	31.8	67.5	99.3	925.4	748.2	354.0	1102.2	58.1	307.5	102.1	467.7	815.6	40.6	1102.2	830.6	99.3	0.0	212.9
4/19/2012	2380.2	0.8	837.4	31.8	65.5	97.4	903.2	744.7	354.0	1098.7	58.1	307.5	102.1	467.7	846.2	40.6	1098.7	837.4	97.4	0.0	204.6
4/20/2012	2380.2	1.2	838.3	31.8	65.3	97.1	877.2	742.6	354.0	1096.6	58.1	307.5	102.1	467.7	875.3	40.6	1096.6	838.3	97.1	0.0	201.8
4/21/2012	2380.2	0.8	854.9	31.8	59.0	90.8	883.7	742.2	354.0	1096.2	58.1	307.5	102.1	467.7	879.1	40.6	1096.2	854.9	90.8	0.0	191.1
4/22/2012	2380.2	2.5	854.9	31.8	50.7	82.5	894.0	741.0	354.0	1095.0	58.1	307.5	102.1	467.7	863.4	40.6	1095.0	854.9	82.5	0.0	198.2
4/23/2012	2380.2	4.9	854.9	31.8	48.6	80.4	896.2	739.7	354.0	1093.7	58.1	307.5	102.1	467.7	862.8	40.6	1093.7	854.9	80.4	0.0	199.0
4/24/2012	2380.2	3.4	855.1	31.8	50.9	82.7	896.4	738.5	354.0	1092.5	58.1	307.5	102.1	467.7	864.7	40.6	1092.5	855.1	82.7	0.0	195.4
4/25/2012	2380.2	0.9	858.1	31.8	44.8	76.7	897.4	736.9	354.0	1090.9	58.1	307.5	102.1	467.7	859.9	40.6	1090.9	858.1	76.7	0.0	196.8
4/26/2012	2380.2	2.7	856.6	31.8	43.7	75.6	872.5	733.2	354.0	1087.2	58.1	307.5	102.1	467.7	887.6	40.6	1087.2	856.6	75.6	0.0	195.7
4/27/2012	2380.2	2.7	848.4	31.8	56.0	87.8	840.1	730.9	354.0	1084.9	58.1	307.5	102.1	467.7	926.4	40.6	1084.9	848.4	87.8	0.0	189.3
4/28/2012	2380.2	1.3	848.2	31.8	60.8	92.6	828.6	728.5	354.0	1082.5	58.1	307.5	102.1	467.7	943.5	40.6	1082.5	848.2	92.6	0.0	182.3
4/29/2012	2380.2	1.6	848.4	31.8	48.9	80.7	798.9	722.3	354.0	1076.3	58.1	307.5	102.1	467.7	968.1	40.6	1076.3	848.4	80.7	0.0	187.8
4/30/2012	2380.2	2.3	848.6	31.8	53.1	84.9	778.1	720.3	354.0	1074.3	58.1	307.5	102.1	467.7	995.9	40.6	1074.3	848.6	84.9	0.0	181.4
5/1/2012	1983.5	1.2	855.0	31.8	48.7	80.5	768.1	719.2	354.0	1073.2	58.1	307.5	126.9	492.5	586.3	40.6	1073.2	855.0	80.5	0.0	178.4
5/2/2012	1983.5	4.6	855.5	31.8	46.5	78.4	862.3	718.3	354.0	1072.3	58.1	307.5	126.9	492.5	494.8	40.6	1072.3	855.5	78.4	0.0	179.1
5/3/2012	1983.5	4.9	854.6	31.8	46.4	78.2	837.3	693.9	354.0	1047.9	58.1	307.5	126.9	492.5	543.4	40.6	1047.9	854.6	78.2	0.0	155.8
5/4/2012	1983.5	2.3	865.5	31.8	46.3	78.1	618.5	670.2	354.0	1024.2	58.1	307.5	126.9	492.5	794.2	40.6	1024.2	865.5	78.1	0.0	121.2
5/5/2012	1983.5	2.0	868.8	31.8	46.0	77.8	540.7	659.9	354.0	1013.9	58.1	307.5	126.9	492.5	885.0	40.6	1013.9	868.8	77.8	0.0	107.9
5/6/2012	1983.5	2.3	869.0	31.8	23.9	55.8	513.2	655.9	354.0	1009.9	58.1	307.5	126.9	492.5	894.8	40.6	1009.9	869.0	55.8	0.0	125.8
5/7/2012	1983.5	3.6	870.2	31.8	17.9	49.7	507.5	654.9	354.0	1008.9	58.1	307.5	126.9	492.5	898.2	40.6	1008.9	870.2	49.7	0.0	129.6
5/8/2012	1983.5	0.8	867.5	31.8	18.7	50.5	507.4	653.4	354.0	1007.4	58.1	307.5	126.9	492.5	895.0	40.6	1007.4	867.5	50.5	0.0	130.0
5/9/2012	1983.5	1.5	868.2	31.8	19.6	51.4	502.8	669.9	354.0	1023.9	58.1	307.5	126.9	492.5	885.4	40.6	1023.9	868.2	51.4	0.0	144.9
5/10/2012	1983.5	0.8	867.2	31.8	19.6	51.4	750.8	716.2	354.0	1070.2	58.1	307.5	126.9	492.5	589.3	40.6	1070.2	867.2	51.4	0.0	192.3
5/11/2012	1983.5	2.2	870.7	31.8	19.2	51.0	1126.5	726.7	354.0	1080.7	58.1	307.5	126.9	492.5	207.6	40.6	1080.7	870.7	51.0	0.0	199.7
5/12/2012	1983.5	0.5	870.7	31.8	19.1	50.9	1212.0	727.4	354.0	1081.4	58.1	307.5	126.9	492.5	119.6	40.6	1081.4	870.7	50.9	0.0	200.5
5/13/2012	1983.5	1.1	870.9	31.8	18.9	50.7	1213.7	727.0	354.0	1081.0	58.1	307.5	126.9	492.5	119.0	40.6	1081.0	870.9	50.7	0.0	200.0
5/14/2012	1983.5	3.8	871.0	31.8	18.9	50.8	1214.3	726.5	354.0	1080.5	58.1	307.5	126.9	492.5	121.8	40.6	1080.5	871.0	50.8	0.0	199.4
5/15/2012	1983.5	3.3	880.2	31.8	18.5	50.3	1214.6	726.0	354.0	1080.0	58.1	307.5	126.9	492.5	130.1	40.6	1080.0	880.2	50.3	0.0	190.2
5/16/2012	1983.5	5.2	880.2	31.8	18.0	49.8	1214.5	726.2	354.0	1080.2	58.1	307.5	126.9	492.5	131.4	40.6	1080.2	880.2	49.8	0.0	190.9
5/17/2012	1983.5	4.0	882.2	31.8	17.8	49.7	1213.5	721.3	354.0	1075.3	58.1	307.5	126.9	492.5	138.0	40.6	1075.3	882.2	49.7	0.0	184.1
5/18/2012	1983.5	4.5	882.0	31.8	17.7	49.5	1159.0	711.3	354.0	1065.3	58.1	307.5	126.9	492.5	202.6	40.6	1065.3	882.0	49.5	0.0	174.4
5/19/2012	1983.5	1.3	881.9	31.8	17.6	49.5	1034.1	703.3	354.0	1057.3	58.1	307.5	126.9	492.5	332.2	40.6	1057.3	881.9	49.5	0.0	166.5
5/20/2012	1983.5	3.0	881.9	31.8	17.6	49.4	946.9	701.5	354.0	1055.5	58.1	307.5	126.9	492.5	422.9	40.6	1055.5	881.9	49.4	0.0	164.8
5/21/2012	1983.5	3.5	881.9	31.8	17.4	49.3	943.9	701.1	354.0	1055.1	58.1	307.5	126.9	492.5	426.6	40.6	1055.1	881.9	49.3	0.0	164.6
5/22/2012	1983.5	3.4	883.3	31.8	17.4	49.3	944.4	700.3	354.0	1054.3	58.1	307.5	126.9	492.5	428.2	40.6	1054.3	883.3	49.3	0.0	162.3
5/23/2012	1983.5	4.9	884.9	31.8	17.7	49.5	946.5	698.6	354.0	1052.6	58.1	307.5	126.9	492.5	431.2	40.6	1052.6	884.9	49.5	0.0	158.8
5/24/2012	1983.5	2.5	884.9	31.8	18.0	49.8	928.4	693.1	354.0	1047.1	58.1	307.5	126.9	492.5	452.6	40.6	1047.1	884.9	49.8	0.0	153.1
5/25/2012	1983.5	4.9	884.5	31.8	17.7	49.5	869.0	688.5	354.0	1042.5	58.1	307.5	126.9	492.5	518.3	40.6	1042.5	884.5	49.5	0.0	149.1
5/26/2012	1983.5	1.4	914.0	31.8	17.9	49.7	835.8	686.2	354.0	1040.2	58.1	307.5	126.9	492.5	580.0	40.6	1040.2	914.0	49.7	0.0	117.2
5/27/2012	1983.5	5.7	914.0	31.8	18.3	50.1	824.3	685.9	354.0	1039.9	58.1	307.5	126.9	492.5	596.6	40.6	1039.9	914.0	50.1	0.0	116.4
5/28/2012	1983.5	3.6	914.0	31.8	18.7	50.6	823.0	684.5	354.0	1038.5	58.1	307.5	126.9	492.5	597.7	40.6	1038.5	914.0	50.6	0.0	114.6
5/29/2012	1983.5	1.9	914.5	31.8	17.9	49.8	823.8	685.6	354.0	1039.6	58.1	307.5	126.9	492.5	593.7	40.6	1039.6	914.5	49.8	0.0	116.0
5/30/2012	1983.5	1.6	914.5	31.8	17.8	49.7	823.5	684.4	354.0	1038.4	58.1	307.5	126.9	492.5	594.7	40.6	1038.4	914.5	49.7	0.0	114.9
5/31/2012	1983.5	3.2	909.7	31.8	17.6	49.4	821.4	680.9	354.0	1034.9	58.1	307.5	126.9	492.5	596.9	40.6	1034.9	909.7	49.4	0.0	116.4
6/1/2012	1983.5	3.5	903.6	31.8	17.5	49.3	749.8	647.4	354.0	1001.4	58.1	307.5	150.3	515.9	672.8	40.6	1001.4	903.6	49.3	0.0	89.1
6/2/2012	1983.5	3.3	900.2	31.8	17.3	49.1	483.7	500.8	354.0	854.8	58.1	307.5	150.3	515.9	1081.6	40.6	854.8	900.2	49.1	0.0	-53.8
6/3/2012	1983.5	4.7	900.2	31.8	17.4	49.2	152.5	408.9	354.0	762.9	58.1	307.5	150.5	516.1	1506.0	40.6	762.9	900.2	49.2	0.0	-145.8
6/4/2012	1983.5	3.3	901.4	31.8	17.8	49.6	54.8	361.3	354.0	715.3	58.1	307.5	134.9	500.5	1667.2	40.6	715.3	901.4	49.6	0.0	-195.1
6/5/2012	1983.5	0.9	911.7	31.8	17.5	49.3	27.2	373.1	354.0	727.1	58.1	307.5	123.5	489.1	1702.1	40.6	727.1	911.7	49.3	0.0	-193.3
6/6/2012	1983.5	2.9	912.9	31.8	17.9	49.7	27.4	389.7	354.0	743.7	58.1	307.5	131.8	497.4	1680.5	40.6	743.7	912.9	49.7	0.0	-178.3
6/7/2012	1983.5	8.5	913.7	31.8	33.9	65.7	27.7	354.5	354.0	708.5	58.1	307.5	129.6	495.2	1739.9	40.6	708.5	913.7	65.7	0.0	-230.2
6/8/2012	1983.5	3.4	916.1	31.8	41.1	72.9	27.7	357.7	354.0	711.7	58.1	307.5	112.0	477.6	1758.9	40.6	711.7	916.1	72.9	0.0	-236.7
6/9/2012	1983.5	2.1	916.9	31.8	30.3	62.1	27.7	377.1	354.0	731.1	58.1	307.5	125.5	491.1	1714.7	40.6	731.1	916.9	62.1	0.0	-207.3

Table G5-5: Local Basin Scale Water Budget Equation

Normal Single Pulse Hydrograph, Scenario S2 (Units = Acre-Feet)

Caballo Reservoir to American Dam

	Surface Water Budget															Groundwater Budget					
	Qus	P	Qp			Qgwrf	Qds			Qgwr				ET	ΔSsw	Qgwus	Qgwr	Qp	Qgwrf	Qgwds	ΔSgw
Date	River Below Caballo Dam	Precipitation Flows in River Channel	Pumping	MODFLOW Groundwater Return Flow to Rio Grande	Measured Irrigation/ Drainage Return Flow	Groundwater Return Flow = Groundwater RF + Irrigation RRF	Downstream Channel Outflow, River above American Dam	Channel Seepage (Qcs)	MODFLOW Floodplain/ Irrigation Based Recharge	Groundwater Recharge = Seepage + Irrigation Based Recharge	Riparian Evapo-transpiration	Crop Evapo-transpiration	Open Water Evaporation	Total ET = Riparian + Crop + Open Water Evaporation	Changes in Surface Water Storage	Upstream Groundwater Inflow	Groundwater Recharge = Seepage + Irrigation Based Recharge	Pumping	Groundwater Return Flow = Groundwater RF + Irrigation RRF	Downstream Groundwater Outflow	Change in Vadose Zone and Groundwater Storage
6/10/2012	1983.5	8.1	916.7	31.8	55.6	87.5	27.8	353.1	354.0	707.1	58.1	307.5	132.7	498.3	1762.5	40.6	707.1	916.7	87.5	0.0	-256.4
6/11/2012	1983.5	4.0	916.3	31.8	79.7	111.6	27.8	337.3	354.0	691.3	58.1	307.5	105.0	470.6	1825.7	40.6	691.3	916.3	111.6	0.0	-296.0
6/12/2012	1983.5	4.1	916.2	31.8	86.1	117.9	27.8	359.3	354.0	713.3	58.1	307.5	108.1	473.7	1806.9	40.6	713.3	916.2	117.9	0.0	-280.1
6/13/2012	1983.5	2.3	909.2	31.8	92.0	123.9	27.8	401.9	354.0	755.9	58.1	307.5	131.1	496.7	1738.4	40.6	755.9	909.2	123.9	0.0	-236.5
6/14/2012	1983.5	5.1	911.5	31.8	91.7	123.5	50.8	354.9	354.0	708.9	58.1	307.5	142.1	507.7	1756.2	40.6	708.9	911.5	123.5	0.0	-285.5
6/15/2012	1983.5	6.9	891.8	31.8	65.9	97.7	29.0	348.2	354.0	702.2	58.1	307.5	120.9	486.5	1762.1	40.6	702.2	891.8	97.7	0.0	-246.7
6/16/2012	1983.5	6.2	892.5	31.8	52.5	84.3	27.3	344.9	354.0	698.9	58.1	307.5	105.5	471.1	1769.1	40.6	698.9	892.5	84.3	0.0	-237.3
6/17/2012	2975.2	8.2	892.5	31.8	61.0	92.8	27.7	351.6	354.0	705.6	58.1	307.5	103.2	468.8	2766.7	40.6	705.6	892.5	92.8	0.0	-239.1
6/18/2012	2975.2	13.5	892.6	31.8	53.3	85.2	27.7	372.4	354.0	726.4	58.1	307.5	102.6	468.2	2744.2	40.6	726.4	892.6	85.2	0.0	-210.7
6/19/2012	2975.2	3.9	892.7	31.8	49.9	81.8	27.7	531.3	354.0	885.3	58.1	307.5	124.4	490.0	2550.6	40.6	885.3	892.7	81.8	0.0	-48.5
6/20/2012	2975.2	8.6	889.7	31.8	47.2	79.0	182.7	549.2	354.0	903.2	58.1	307.5	149.6	515.2	2351.4	40.6	903.2	889.7	79.0	0.0	-24.9
6/21/2012	2975.2	3.6	888.6	31.8	51.0	82.9	194.5	518.7	354.0	872.7	58.1	307.5	150.3	515.9	2367.2	40.6	872.7	888.6	82.9	0.0	-58.1
6/22/2012	2975.2	3.9	888.6	31.8	46.7	78.5	146.4	523.2	354.0	877.2	58.1	307.5	150.3	515.9	2406.8	40.6	877.2	888.6	78.5	0.0	-49.3
6/23/2012	2975.2	6.8	888.5	31.8	49.4	81.2	156.7	506.1	354.0	860.1	58.1	307.5	150.3	515.9	2419.0	40.6	860.1	888.5	81.2	0.0	-68.9
6/24/2012	2975.2	6.7	888.5	31.8	45.1	77.0	125.3	483.2	354.0	837.2	58.1	307.5	150.3	515.9	2469.0	40.6	837.2	888.5	77.0	0.0	-87.6
6/25/2012	2975.2	5.1	888.5	31.8	46.1	77.9	90.0	456.8	354.0	810.8	58.1	307.5	150.3	515.9	2530.0	40.6	810.8	888.5	77.9	0.0	-114.9
6/26/2012	2975.2	6.0	887.9	31.8	43.9	75.8	56.7	433.2	354.0	787.2	58.1	307.5	150.3	515.9	2585.0	40.6	787.2	887.9	75.8	0.0	-135.9
6/27/2012	2975.2	12.7	879.9	31.8	48.4	80.2	30.6	418.6	354.0	772.6	58.1	307.5	143.0	508.6	2636.2	40.6	772.6	879.9	80.2	0.0	-146.9
6/28/2012	2975.2	12.2	880.2	31.8	47.6	79.4	27.3	419.0	354.0	773.0	58.1	307.5	126.7	492.3	2654.3	40.6	773.0	880.2	79.4	0.0	-145.9
6/29/2012	2975.2	20.1	877.0	31.8	32.6	64.4	27.6	430.4	354.0	784.4	58.1	307.5	126.2	491.8	2632.9	40.6	784.4	877.0	64.4	0.0	-116.4
6/30/2012	2975.2	9.6	874.4	31.8	25.1	56.9	27.7	431.8	354.0	785.8	58.1	307.5	133.4	499.0	2603.6	40.6	785.8	874.4	56.9	0.0	-104.8
7/1/2012	3966.9	11.8	849.4	31.8	34.0	65.9	27.7	436.2	354.0	790.2	58.1	307.5	116.0	481.6	3594.5	40.6	790.2	849.4	65.9	0.0	-84.4
7/2/2012	3966.9	16.7	800.0	31.8	36.2	68.0	27.8	499.9	354.0	853.9	58.1	307.5	119.5	485.1	3484.9	40.6	853.9	800.0	68.0	0.0	26.5
7/3/2012	3966.9	7.7	782.5	31.8	40.9	72.7	142.5	695.0	354.0	1049.0	58.1	307.5	129.8	495.4	3143.0	40.6	1049.0	782.5	72.7	0.0	234.4
7/4/2012	3966.9	12.7	780.3	31.8	49.0	80.8	961.0	737.9	354.0	1091.9	58.1	307.5	132.0	497.6	2290.2	40.6	1091.9	780.3	80.8	0.0	271.5
7/5/2012	3966.9	20.2	779.0	31.8	53.0	84.9	1084.9	744.5	354.0	1098.5	58.1	307.5	132.0	497.6	2170.0	40.6	1098.5	779.0	84.9	0.0	275.3
7/6/2012	3966.9	11.0	781.5	31.8	61.3	93.1	1218.2	747.7	354.0	1101.7	58.1	307.5	132.0	497.6	2035.1	40.6	1101.7	781.5	93.1	0.0	267.7
7/7/2012	3966.9	13.1	766.3	31.8	56.0	87.8	1308.8	750.3	354.0	1104.3	58.1	307.5	132.0	497.6	1923.4	40.6	1104.3	766.3	87.8	0.0	290.9
7/8/2012	3966.9	13.6	766.1	31.8	94.2	126.0	1515.2	754.0	354.0	1108.0	58.1	307.5	132.0	497.6	1751.9	40.6	1108.0	766.1	126.0	0.0	256.5
7/9/2012	3966.9	18.6	764.3	31.8	81.6	113.4	1630.6	755.7	354.0	1109.7	58.1	307.5	132.0	497.6	1625.3	40.6	1109.7	764.3	113.4	0.0	272.7
7/10/2012	3966.9	14.9	766.2	31.8	66.1	97.9	1746.6	756.3	354.0	1110.3	58.1	307.5	132.0	497.6	1491.5	40.6	1110.3	766.2	97.9	0.0	286.8
7/11/2012	3966.9	12.0	758.4	31.8	55.0	86.8	1787.1	756.4	354.0	1110.4	58.1	307.5	132.0	497.6	1429.0	40.6	1110.4	758.4	86.8	0.0	305.8
7/12/2012	3966.9	10.6	757.9	31.8	40.6	72.5	1819.3	755.4	354.0	1109.4	58.1	307.5	132.0	497.6	1381.6	40.6	1109.4	757.9	72.5	0.0	319.7
7/13/2012	3966.9	12.9	758.0	31.8	35.4	67.2	1845.5	755.9	354.0	1109.9	58.1	307.5	132.0	497.6	1352.1	40.6	1109.9	758.0	67.2	0.0	325.3
7/14/2012	3966.9	10.4	750.6	31.8	34.9	66.7	1843.3	753.7	354.0	1107.7	58.1	307.5	132.0	497.6	1346.1	40.6	1107.7	750.6	66.7	0.0	331.0
7/15/2012	2975.2	22.7	750.6	31.8	31.9	63.7	1815.2	746.3	354.0	1100.3	58.1	307.5	132.0	497.6	399.1	40.6	1100.3	750.6	63.7	0.0	326.7
7/16/2012	2975.2	8.5	746.8	31.8	35.0	66.8	1743.4	744.8	354.0	1098.8	58.1	307.5	132.0	497.6	457.5	40.6	1098.8	746.8	66.8	0.0	325.9
7/17/2012	2975.2	17.2	741.1	31.8	33.4	65.2	1198.6	721.5	354.0	1075.5	58.1	307.5	132.0	497.6	1027.1	40.6	1075.5	741.1	65.2	0.0	309.8
7/18/2012	2975.2	11.8	729.3	31.8	61.0	92.8	756.2	696.7	354.0	1050.7	58.1	307.5	132.0	497.6	1504.6	40.6	1050.7	729.3	92.8	0.0	269.2
7/19/2012	2975.2	12.5	729.2	31.8	81.5	113.3	578.7	655.4	354.0	1009.4	58.1	307.5	132.0	497.6	1744.6	40.6	1009.4	729.2	113.3	0.0	207.5
7/20/2012	2975.2	14.1	728.4	31.8	70.8	102.6	416.7	616.9	354.0	970.9	58.1	307.5	132.0	497.6	1935.2	40.6	970.9	728.4	102.6	0.0	180.5
7/21/2012	2975.2	19.0	724.0	31.8	65.5	97.3	323.1	545.9	354.0	899.9	58.1	307.5	132.0	497.6	2094.9	40.6	899.9	724.0	97.3	0.0	119.3
7/22/2012	2975.2	14.1	725.9	31.8	65.3	97.1	189.6	494.9	354.0	848.9	58.1	307.5	132.0	497.6	2276.3	40.6	848.9	725.9	97.1	0.0	66.5
7/23/2012	2975.2	17.1	725.9	31.8	66.5	98.4	115.9	467.3	354.0	821.3	58.1	307.5	132.0	497.6	2381.8	40.6	821.3	725.9	98.4	0.0	37.7
7/24/2012	2975.2	13.3	725.9	31.8	72.5	104.3	74.2	511.0	354.0	865.0	58.1	307.5	132.0	497.6	2381.9	40.6	865.0	725.9	104.3	0.0	75.5
7/25/2012	1983.5	10.9	727.8	31.8	94.5	126.4	153.3	623.6	354.0	977.6	58.1	307.5	132.0	497.6	1220.0	40.6	977.6	727.8	126.4	0.0	164.1
7/26/2012	1983.5	18.9	727.1	31.8	93.9	125.7	456.4	638.3	354.0	992.3	58.1	307.5	132.0	497.6	908.9	40.6	992.3	727.1	125.7	0.0	180.1
7/27/2012	1983.5	12.1	726.2	31.8	88.0	119.9	498.0	500.3	354.0	854.3	58.1	307.5	132.0	497.6	991.8	40.6	854.3	726.2	119.9	0.0	48.8
7/28/2012	1983.5	14.7	723.9	31.8	81.2	113.1	211.9	370.8	354.0	724.8	58.1	307.5	132.2	497.8	1400.7	40.6	724.8	723.9	113.1	0.0	-71.5
7/29/2012	1983.5	22.1	723.9	31.8	78.1	109.9	41.9	353.0	354.0	707.0	58.1	307.5	122.4	488.0	1602.6	40.6	707.0	723.9	109.9	0.0	-86.2
7/30/2012	1983.5	16.3	724.1	31.8	71.0	102.9	27.2	333.9	354.0	687.9	58.1	307.5	108.1	473.7	1638.0	40.6	687.9	724.1	102.9	0.0	-98.4
7/31/2012	1983.5	10.9	722.6	31.8	64.7	96.5	27.4	325.1	354.0	679.1	58.1	307.5	93.9	459.5	1647.5	40.6	679.1	722.6	96.5	0.0	-99.4
8/1/2012	1388.4	22.6	722.7	31.8	69.2	101.0	27.7	381.1	354.0	735.1	58.1	307.5	99.4	465.0	1007.0	40.6	735.1	722.7	101.0	0.0	-48.0
8/2/2012	1388.4	22.9	722.2	31.8	81.7	113.6	39.4	516.4	354.0	870.4	58.1	307.5	121.1	486.7	850.6	40.6	870.4	722.2	113.6	0.0	75.3
8/3/2012	1388.4	18.5	722.7	31.8	68.8	100.7	330.1	456.5	354.0	810.5	58.1	307.5	128.9	494.5	595.1	40.6	810.5	722.7	100.7	0.0	27.8
8/4/2012	1388.4	13.1	723.1	31.8	54.5	86.3	268.0	324.0	354.0	678.0	58.1	307.5	128.9	494.5	770.4	40.6	678.0	723.1	86.3	0.0	-90.8
8/5/2012	1388.4	15.8	723.1	31.8	50.0	81.8	95.9	291.4	354.0	645.4	58.1	307.5	128.9	494.5	973.3	40.6	645.4	723.1	81.8	0.0	-118.9
8/6/2012	1388.4	14.4	723.0	31.8	48.4	80.2	32.2	292.9	354.0	646.9	58.1	307.5	129.6	495.2	1031.7	40.6	646.9	723.0	80.2	0.0	-115.7
8/7/2012	1388.4	17.6	726.2	31.8	47.8	79.6	27.2	298.9	354.0	652.9	58.1	307.5	120.4	486.0	1045.7	40.6	652.9	726.2	79.6	0.0	-112.2
8/8/2012	1388.4	10.5	728.2	31.8	63.3	95.1	27.3	301.5	354.0	655.5	58.1	307.5	122.0	487.6	1051.9	40.6	655.5	728.2	95.1	0.0	-127.2
8/9/2012	1388.4	18.1	725.6	31.8	72.9	104.7	27.7	306.4	354.0	660.4	58.1	307.5	126.2	491.8	1057.1	40.6	660.4	725.6	104.7	0.0	-129.3
8/10/2012	1388.4	16.6	725.8	31.8	159.6	191.5	36.4	312.1	354.0	666.1	58.1	307.5	128.9	494.5	1125.3	40.6	666.1	725.8	191.5	0.0	-210.5
8/11/2012	1388.4	20.3	727.6	31.8	122.3	154.1	69.5	304.2	354.0	658.2	58.1	307.5	128.9	494.5	1068.2	40.6	658.2	727.6	154.1	0.0	-182.8
8/12/2012	1388.4	24.7	727.6	31.8	265.6	297.4	76.8	300.2	354.0	654.2	58.1	307.5	128.9	494.5	1212.6	40.6	654.2	727.6	297.4	0.0	-330.1
8/13/2012	1388.4	21.2	727.6	31.8	254.0	285.9	41.6	310.4	354.0	664.4	58.1	307.5	128.9	494.5	1222.5	40.6	664.4	727.6	285.9	0.0	-308.4
8/14/2012	1388.4	28.8	727.6	31.8	223.7	255.5	27.3	337.6	354.0	691.6	58.1	307.5	128.5	494.1	1187.2	40.6	691.6	727.6	255.5	0.0	-250.8
8/15/2012	1388.4	20.8	727.6	31.8	293.6	325.4	30.9	326.7	354.0	680.7	58.1	307.5	129.6	495.2	1255.3	40.6	680.7	727.6	325.4	0.0	-331.6
8/16/2012	1388.4	17.1	727.4	31.8	99.3	131.1	27.4	347.4	354.0	701.4	58.1	307.5	110.4	476.0	1059.2	40.6	701.4	727.4	131.1	0.0	-116.5
8/17/2012	1388.4	13.8	728.2	31.8	105.4	137.2	27.3	509.0	354.0	863.0	58.1	307.5	116.9	482.5	894.7	40.6	863.0	728.2	137.2	0.0	38.3
8/18/2012	1388.4	16.4	728.9	31.8	101.8	133.7	241.9	576.9	354.0	930.9	58.1	307.5	128.9	494.5	600.2	40.6	930.9	728.9	133.7	0.0	108.9
8/19/2012	1388.4	16.5	728.9	31.8	97.7	129.5	376.9	578.6	354.0	932.6	58.1	307.5	128.9	494.5	459.4	40.6	932.6	728.9	129.5	0.0	114.8
8/20/2012	1388.4	22.4	728.9	31.8	102.1	133.9	369.7	577.4	354.0	931.4	58.1	307.5	128.9	494.5	478.1	40.6	931.4	728.9	133.9	0.0	109.2
8/21/2012	1388.4	16.2	729.1	31.8	102.4	134.2	362.6	579.2	354.0	933.2	58.1	307.5	128.9	494.5	477.6	40.6	933.2	729.1	134.2	0.0	110.5
8/22/2012	1388.4	19.0	725.7	31.8	102.9	134.8	375.1	591.5	354.0	945.5	58.1	307.5	128.9	494.5	452.9	40.6	945.5	725.7	134.8	0.0	125.6
8/23/2012	1388.4	27.0	723.7	31.8	94.7	126.5	421.7	598.7	354.0	952.7	58.1	307.5	128.9	494.5	396.6	40.6	952.7	723.7	126.5	0.0	143.2
8/24/2012	1388.4	18.3	727.7	31.8	100.8	132.6	441.6	594.8	354.0	948.8	58.1	307.5	128.9	494.5	382.2	40.6	948.8	727.7	132.6	0.0	129.1

Table G5-5: Local Basin Scale Water Budget Equation

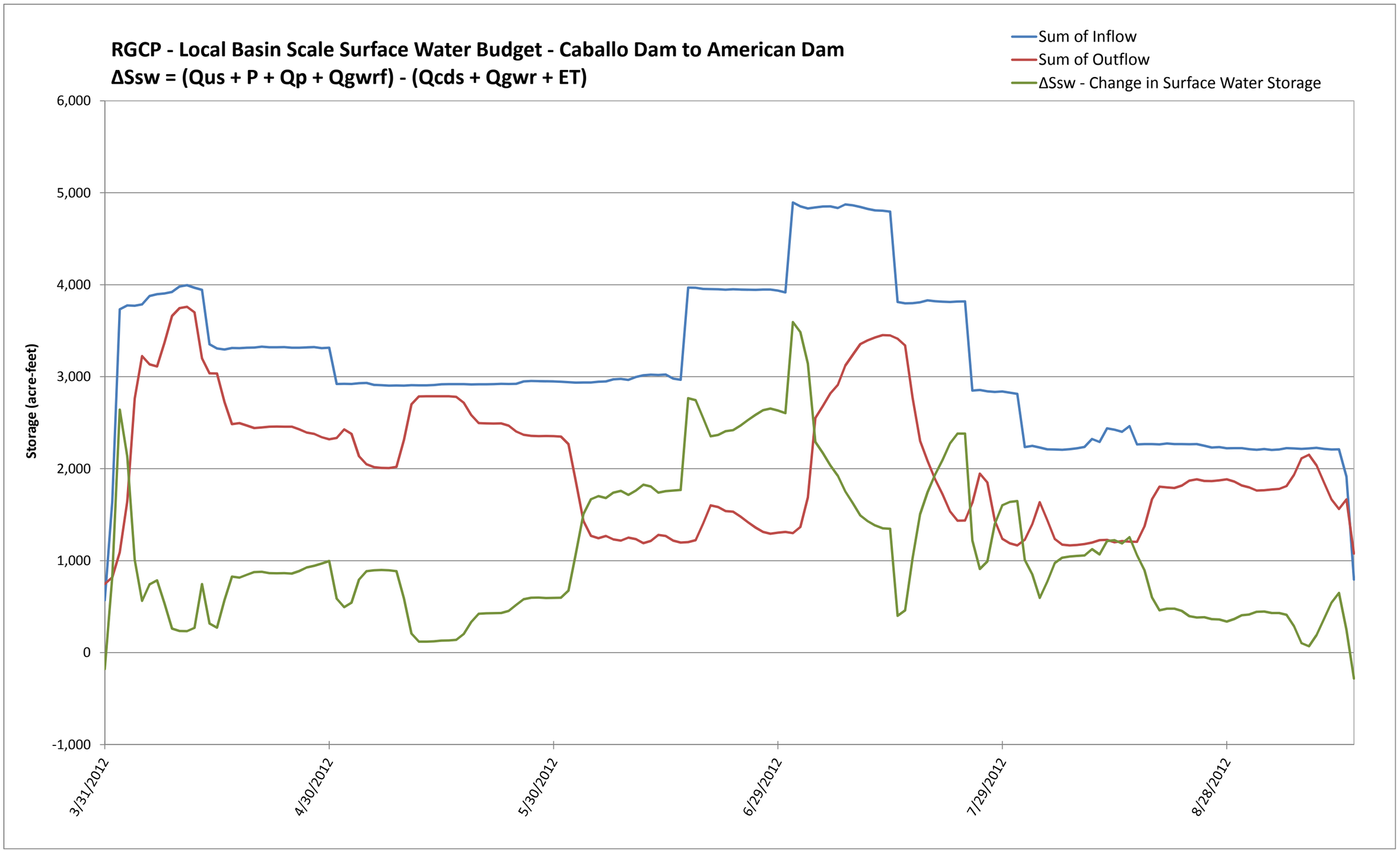
Normal Single Pulse Hydrograph, Scenario S2 (Units = Acre-Feet)

Caballo Reservoir to American Dam

	Surface Water Budget															Groundwater Budget					
	Qus	P	Qp			Qgwrf	Qds			Qgwr				ET	ΔSsw	Qgwus	Qgwr	Qp	Qgwrf	Qgwds	ΔSgw
Date	River Below Caballo Dam	Precipitation Flows in River Channel	Pumping	MODFLOW Groundwater Return Flow to Rio Grande	Measured Irrigation/ Drainage Return Flow	Groundwater Return Flow = Groundwater RF + Irrigation RRF	Downstream Channel Outflow, River above American Dam	Channel Seepage (Qcs)	MODFLOW Floodplain/ Irrigation Based Recharge	Groundwater Recharge = Seepage + Irrigation Based Recharge	Riparian Evapo-transpiration	Crop Evapo-transpiration	Open Water Evaporation	Total ET = Riparian + Crop + Open Water Evaporation	Changes in Surface Water Storage	Upstream Groundwater Inflow	Groundwater Recharge = Seepage + Irrigation Based Recharge	Pumping	Groundwater Return Flow = Groundwater RF + Irrigation RRF	Downstream Groundwater Outflow	Change in Vadose Zone and Groundwater Storage
8/25/2012	1388.4	15.7	727.4	31.8	86.8	118.6	422.2	595.0	354.0	949.0	58.1	307.5	128.9	494.5	384.4	40.6	949.0	727.4	118.6	0.0	143.7
8/26/2012	1388.4	12.5	727.3	31.8	69.3	101.1	420.2	596.5	354.0	950.5	58.1	307.5	128.9	494.5	364.1	40.6	950.5	727.3	101.1	0.0	162.7
8/27/2012	1388.4	15.1	727.2	31.8	71.4	103.3	424.8	600.3	354.0	954.3	58.1	307.5	128.9	494.5	360.4	40.6	954.3	727.2	103.3	0.0	164.5
8/28/2012	1388.4	8.0	727.1	31.8	65.7	97.5	438.1	597.3	354.0	951.3	58.1	307.5	128.9	494.5	337.1	40.6	951.3	727.1	97.5	0.0	167.4
8/29/2012	1388.4	10.9	728.1	31.8	64.4	96.2	426.0	584.6	354.0	938.6	58.1	307.5	128.9	494.5	364.5	40.6	938.6	728.1	96.2	0.0	154.9
8/30/2012	1388.4	16.6	729.4	31.8	56.6	88.4	390.5	578.6	354.0	932.6	58.1	307.5	128.9	494.5	405.2	40.6	932.6	729.4	88.4	0.0	155.4
8/31/2012	1388.4	14.3	723.8	31.8	52.9	84.7	375.0	573.3	354.0	927.3	58.1	307.5	128.9	494.5	414.5	40.6	927.3	723.8	84.7	0.0	159.4
9/1/2012	1388.4	8.9	721.1	31.8	55.0	86.8	359.7	573.3	354.0	927.3	58.1	307.5	109.5	475.1	443.2	40.6	927.3	721.1	86.8	0.0	160.0
9/2/2012	1388.4	16.9	719.8	31.8	55.9	87.7	359.8	577.0	354.0	931.0	58.1	307.5	109.5	475.1	446.8	40.6	931.0	719.8	87.7	0.0	164.2
9/3/2012	1388.4	10.6	718.6	31.8	54.5	86.3	365.8	578.5	354.0	932.5	58.1	307.5	109.5	475.1	430.5	40.6	932.5	718.6	86.3	0.0	168.2
9/4/2012	1388.4	14.7	718.6	31.8	55.6	87.4	369.1	581.0	354.0	935.0	58.1	307.5	109.5	475.1	429.9	40.6	935.0	718.6	87.4	0.0	169.7
9/5/2012	1388.4	20.1	721.1	31.8	61.1	93.0	383.4	598.8	354.0	952.8	58.1	307.5	109.5	475.1	411.3	40.6	952.8	721.1	93.0	0.0	179.4
9/6/2012	1388.4	16.9	721.2	31.8	62.3	94.1	470.0	634.8	354.0	988.8	58.1	307.5	109.5	475.1	286.7	40.6	988.8	721.2	94.1	0.0	214.2
9/7/2012	1388.4	18.1	717.2	31.8	59.3	91.1	633.5	649.3	354.0	1003.3	58.1	307.5	109.5	475.1	102.9	40.6	1003.3	717.2	91.1	0.0	235.7
9/8/2012	1388.4	8.6	718.1	31.8	73.1	105.0	678.1	644.3	354.0	998.3	58.1	307.5	109.5	475.1	68.6	40.6	998.3	718.1	105.0	0.0	215.8
9/9/2012	1388.4	8.5	718.0	31.8	79.2	111.0	595.4	612.2	354.0	966.2	58.1	307.5	109.5	475.1	189.2	40.6	966.2	718.0	111.0	0.0	177.8
9/10/2012	1388.4	12.8	718.5	31.8	63.1	95.0	454.9	565.6	354.0	919.6	58.1	307.5	109.5	475.1	365.1	40.6	919.6	718.5	95.0	0.0	146.8
9/11/2012	1388.4	14.8	715.6	31.8	57.8	89.7	326.5	509.8	354.0	863.8	58.1	307.5	109.5	475.1	543.0	40.6	863.8	715.6	89.7	0.0	99.2
9/12/2012	1388.4	23.5	715.5	31.8	51.4	83.2	217.1	514.8	354.0	868.8	58.1	307.5	109.5	475.1	649.7	40.6	868.8	715.5	83.2	0.0	110.7
9/13/2012	1118.7	15.8	700.9	31.8	46.0	77.8	240.6	596.2	354.0	950.2	58.1	307.5	109.5	475.1	247.3	40.6	950.2	700.9	77.8	0.0	212.1
9/14/2012	0.0	14.6	700.8	31.8	46.4	78.2	0.0	300.6	354.0	654.6	58.1	307.5	55.2	420.8	-281.8	40.6	654.6	700.8	78.2	0.0	-83.8

RGCP - Local Basin Scale Surface Water Budget - Caballo Dam to American Dam

ΔSsw = (Qus + P + Qp + Qgwrf) - (Qcds + Qgwr + ET)



RGCP - Local Basin Scale Ground Water Budget - Caballo Dam to American Dam

ΔSgw = (Qgwus + Qgwr) - (Qp + Qgwrf + Qgwds)