

# **RIO GRANDE CANALIZATION PROJECT**

## **WATER BUDGET STUDY**

### **Final Report**

## **Appendix F1 - Water Budget Analysis Summary**

### **2010-2012 Study Period Analysis**

### **Based on HEC-RAS Model Results**

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Table F1-1: RGCP Channel Water Budget Equation Analysis Segment 1

2010-12 Study Period

(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	MODFLOW Floodplain Recharge	Open Water Channel Evaporation	MODFLOW Riparian Evapo- transpiration	Diversions Authorized (Percha, Arrey, & Leasburg)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
1/1/2010	1.7	1.1	0.0	0.0	1.0	51.7	0.0	1.7	0.1	0.0	11.5	0.0	0.0	42.2
1/2/2010	1.8	1.7	0.1	0.0	1.0	51.7	3.0	1.8	0.1	0.0	11.5	0.0	0.0	40.0
1/3/2010	2.1	1.5	2.0	0.0	1.0	51.7	5.2	2.1	0.1	0.0	11.5	0.0	0.0	39.5
1/4/2010	2.2	1.3	3.2	0.0	1.0	51.7	6.5	2.2	0.1	0.0	11.5	0.0	0.0	39.3
1/5/2010	2.2	1.6	3.4	0.0	1.0	51.7	6.5	2.2	0.1	0.0	11.5	0.0	0.0	39.6
1/6/2010	2.2	1.9	3.2	0.0	1.0	51.7	6.5	2.2	0.1	0.0	11.5	0.0	0.0	39.8
1/7/2010	2.1	1.5	3.4	0.0	1.0	51.7	6.5	2.1	0.1	0.0	11.5	0.0	0.0	39.5
1/8/2010	2.0	2.5	3.5	0.0	1.0	51.7	6.5	2.0	0.1	0.0	11.5	0.0	0.0	40.7
1/9/2010	1.9	1.6	3.6	0.0	1.0	51.7	6.5	1.9	0.1	0.0	11.5	0.0	0.0	39.8
1/10/2010	1.9	1.0	3.6	0.0	1.0	51.7	6.6	1.9	0.1	0.0	11.5	0.0	0.0	39.2
1/11/2010	2.1	1.7	3.3	0.0	1.0	51.7	6.5	2.1	0.1	0.0	11.5	0.0	0.0	39.7
1/12/2010	2.2	2.6	3.3	0.0	1.0	51.7	6.5	2.2	0.1	0.0	11.5	0.0	0.0	40.5
1/13/2010	2.2	1.2	3.2	0.0	1.0	51.7	6.5	2.2	0.1	0.0	11.5	0.0	0.0	39.2
1/14/2010	2.1	2.1	3.4	0.0	1.0	51.7	6.5	2.1	0.1	0.0	11.5	0.0	0.0	40.2
1/15/2010	1.9	1.1	3.5	0.0	1.0	51.7	6.4	1.9	0.1	0.0	11.5	0.0	0.0	39.3
1/16/2010	2.0	0.4	3.5	0.0	1.0	51.7	6.5	2.0	0.1	0.0	11.5	0.0	0.0	38.5
1/17/2010	1.9	2.3	3.6	0.0	1.0	51.7	6.5	1.9	0.1	0.0	11.5	0.0	0.0	40.5
1/18/2010	1.9	2.6	3.5	0.0	1.0	51.7	6.5	1.9	0.1	0.0	11.5	0.0	0.0	40.9
1/19/2010	1.9	0.8	3.5	0.0	1.0	51.7	6.4	1.9	0.1	0.0	11.5	0.0	0.0	39.1
1/20/2010	1.9	1.2	3.6	0.0	1.0	51.7	6.5	1.9	0.1	0.0	11.5	0.0	0.0	39.5
1/21/2010	2.1	2.0	3.3	0.0	1.0	51.7	6.4	2.1	0.1	0.0	11.5	0.0	0.0	40.0
1/22/2010	2.1	1.2	3.4	0.0	1.0	51.7	6.5	2.1	0.1	0.0	11.5	0.0	0.0	39.2
1/23/2010	2.1	0.4	3.4	0.0	1.0	51.7	6.5	2.1	0.1	0.0	11.5	0.0	0.0	38.5
1/24/2010	2.1	0.8	3.2	0.0	1.0	51.7	6.4	2.1	0.1	0.0	11.5	0.0	0.0	38.8
1/25/2010	2.1	2.0	3.2	0.0	1.0	51.7	6.3	2.1	0.1	0.0	11.5	0.0	0.0	40.1
1/26/2010	1.8	1.3	3.5	0.0	1.0	51.7	6.4	1.8	0.1	0.0	11.5	0.0	0.0	39.6
1/27/2010	91.4	1.6	0.0	0.0	1.0	51.7	6.5	15.9	0.1	0.0	11.5	0.0	0.0	111.8
1/28/2010	176.3	2.7	0.0	0.0	1.0	51.7	6.5	17.5	0.1	0.0	11.5	0.0	0.0	196.2
1/29/2010	175.9	2.0	0.0	0.0	1.0	51.7	6.1	18.9	0.1	0.0	11.5	0.0	0.0	194.1
1/30/2010	177.0	1.9	0.0	0.0	1.0	51.7	10.1	19.7	0.1	0.0	11.5	0.0	0.0	190.3
1/31/2010	177.6	2.8	0.0	0.0	1.0	51.7	13.0	19.9	0.1	0.0	11.5	0.0	0.0	188.7
2/1/2010	178.1	1.2	0.0	0.0	1.0	51.7	13.1	19.9	0.1	0.0	11.5	0.0	0.0	187.6
2/2/2010	178.8	1.6	0.0	0.0	1.0	51.7	13.2	19.9	0.1	0.0	11.5	0.0	0.0	188.4
2/3/2010	104.7	1.1	0.0	0.0	1.0	51.7	13.3	18.8	0.1	0.0	11.5	0.0	0.0	114.9
2/4/2010	1.5	1.2	10.4	0.0	1.0	51.7	13.0	1.5	0.1	0.0	11.5	0.0	0.0	39.9
2/5/2010	1.7	1.5	1.1	0.0	1.0	51.7	3.8	1.7	0.1	0.0	11.5	0.0	0.0	40.0
2/6/2010	1.8	0.7	3.4	0.0	1.0	51.7	6.2	1.8	0.1	0.0	11.5	0.0	0.0	39.1
2/7/2010	1.9	0.5	3.5	0.0	1.0	51.7	6.4	1.9	0.1	0.0	11.5	0.0	0.0	38.8
2/8/2010	1.7	1.9	3.8	0.0	1.0	51.7	6.5	1.7	0.1	0.0	11.5	0.0	0.0	40.3
2/9/2010	1.7	2.2	3.7	0.0	1.0	51.7	6.4	1.7	0.1	0.0	11.5	0.0	0.0	40.6
2/10/2010	2.3	1.3	3.1	0.0	1.0	51.7	6.5	2.3	0.1	0.0	11.5	0.0	0.0	39.2
2/11/2010	3.0	1.1	2.5	0.0	1.0	51.7	6.5	3.0	0.1	0.0	11.5	0.0	0.0	38.3
2/12/2010	3.6	2.1	1.8	0.0	1.0	51.7	6.5	3.6	0.1	0.0	11.5	0.0	0.0	38.7
2/13/2010	4.2	1.2	1.2	0.0	1.0	51.7	6.4	4.2	0.1	0.0	11.5	0.0	0.0	37.2
2/14/2010	4.9	1.8	0.5	0.0	1.0	51.7	6.4	4.9	0.1	0.0	11.5	0.0	0.0	37.1
2/15/2010	5.5	0.7	0.0	0.0	1.0	51.7	6.5	5.5	0.1	0.0	11.5	0.0	0.0	35.4
2/16/2010	6.1	0.7	0.0	0.0	1.0	51.7	6.3	6.1	0.1	0.0	11.5	0.0	0.0	35.5
2/17/2010	6.8	2.9	0.0	0.0	1.0	51.7	6.4	6.8	0.1	0.0	11.5	0.0	0.0	37.6
2/18/2010	7.4	0.8	0.0	0.0	1.0	51.7	6.3	7.4	0.1	0.0	11.5	0.0	0.0	35.7
2/19/2010	8.1	1.0	0.0	0.0	1.0	51.7	6.4	8.1	0.1	0.0	11.5	0.0	0.0	35.7
2/20/2010	8.7	1.0	0.0	0.0	1.0	51.7	6.4	8.7	0.1	0.0	11.5	0.0	0.0	35.8

Table F1-1: RGCP Channel Water Budget Equation Analysis Segment 1

2010-12 Study Period

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	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	MODFLOW Floodplain Recharge	Open Water Channel Evaporation	MODFLOW Riparian Evapo- transpiration	Diversions Authorized (Percha, Arrey, & Leasburg)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
2/21/2010	9.3	2.9	0.0	0.0	1.0	51.7	6.5	9.3	0.1	0.0	11.5	0.0	0.0	37.5
2/22/2010	10.0	1.3	0.0	0.0	1.0	51.7	6.4	10.0	0.1	0.0	11.5	0.0	0.0	36.1
2/23/2010	10.6	3.7	0.0	0.0	1.0	51.7	6.4	10.6	0.1	0.0	11.5	0.0	0.0	38.5
2/24/2010	22.8	1.2	0.0	0.0	1.0	51.7	6.4	15.9	0.1	0.0	11.5	0.0	0.0	42.8
2/25/2010	21.1	2.8	0.0	0.0	1.0	51.7	6.5	15.9	0.1	0.0	11.5	0.0	0.0	42.6
2/26/2010	247.3	1.7	0.0	0.0	1.0	51.7	6.4	18.3	0.1	0.0	11.5	0.0	0.0	265.6
2/27/2010	188.8	0.8	0.0	0.0	1.0	51.7	6.5	20.6	0.1	0.0	11.5	0.0	0.0	203.6
2/28/2010	189.4	2.1	0.0	0.0	1.0	51.7	19.5	21.2	0.1	0.0	11.5	0.0	0.0	191.9
3/1/2010	192.5	1.7	309.4	0.0	1.0	28.8	502.9	20.6	6.3	6.2	33.7	0.0	0.0	-36.3
3/2/2010	195.0	0.9	305.3	0.0	1.0	28.8	501.4	20.7	6.3	6.2	33.7	0.0	0.0	-37.3
3/3/2010	195.7	0.9	305.1	0.0	1.0	28.8	501.8	20.8	6.3	6.2	33.7	0.0	0.0	-37.3
3/4/2010	590.0	1.9	0.0	0.0	1.0	28.8	502.3	25.9	6.3	6.2	33.7	0.0	0.0	47.2
3/5/2010	693.7	0.3	0.0	0.0	1.0	28.8	507.3	37.8	6.3	6.2	33.7	0.0	0.0	132.6
3/6/2010	898.3	1.1	0.0	0.0	1.0	28.8	659.8	45.9	6.3	6.2	33.7	0.0	0.0	177.2
3/7/2010	898.7	1.0	0.0	0.0	1.0	28.8	788.7	50.8	6.3	6.2	33.7	0.0	0.0	43.8
3/8/2010	1094.3	1.1	0.0	0.0	1.0	28.8	839.4	53.8	6.3	6.2	33.7	0.0	0.0	185.7
3/9/2010	1363.4	0.6	0.0	0.0	1.0	28.8	991.6	61.5	6.3	6.2	33.7	0.0	0.0	294.5
3/10/2010	1451.2	1.1	0.0	0.0	1.0	28.8	1259.2	67.3	6.3	6.2	33.7	0.0	0.0	109.4
3/11/2010	1451.0	1.2	0.0	0.0	1.0	28.8	1364.7	68.7	6.3	6.2	33.7	0.0	0.0	2.4
3/12/2010	1517.1	1.3	0.0	0.0	1.0	28.8	1372.1	69.7	6.3	6.2	33.7	0.0	0.0	60.3
3/13/2010	1769.7	0.6	0.0	0.0	1.0	28.8	1437.7	74.3	6.3	6.2	33.7	0.0	0.0	241.8
3/14/2010	1767.8	0.8	0.0	0.0	1.0	28.8	1670.6	77.7	6.3	6.2	33.7	0.0	0.0	4.0
3/15/2010	1881.6	0.7	0.0	0.0	1.0	28.8	1672.7	76.9	6.3	6.2	33.7	166.6	1.7	-52.0
3/16/2010	2498.5	0.4	0.0	0.0	1.0	28.8	1650.1	82.9	6.3	6.2	33.7	327.3	3.3	419.0
3/17/2010	2628.1	0.6	0.0	0.0	1.0	28.8	2072.5	90.7	6.3	6.2	33.7	305.5	3.1	140.6
3/18/2010	2420.3	1.2	54.4	0.0	1.0	28.8	2194.1	89.9	6.3	6.2	33.7	281.7	2.8	-108.9
3/19/2010	2251.8	0.8	53.6	0.0	1.0	28.8	2024.7	85.4	6.3	6.2	33.7	281.7	2.8	-104.8
3/20/2010	2375.5	1.2	0.0	0.0	1.0	28.8	1885.5	85.2	6.3	6.2	33.7	281.7	2.8	105.2
3/21/2010	2610.9	0.7	0.0	0.0	1.0	28.8	2009.9	90.0	6.3	6.2	33.7	277.7	2.8	214.8
3/22/2010	2605.3	2.1	0.0	0.0	1.0	28.8	2219.6	92.3	6.3	6.2	33.7	289.6	2.9	-13.3
3/23/2010	3023.8	0.5	0.0	0.0	1.0	28.8	2253.7	97.9	6.3	6.2	33.7	301.5	3.0	351.8
3/24/2010	3724.5	0.2	0.0	0.0	1.0	28.8	2498.6	111.9	6.3	6.2	33.7	519.7	5.2	573.0
3/25/2010	3554.5	0.8	20.9	0.0	1.0	28.8	2941.7	115.6	6.3	6.2	33.7	634.7	6.3	-138.6
3/26/2010	3374.1	2.2	0.0	0.0	1.0	28.8	2770.7	111.7	6.3	6.2	33.7	601.0	6.0	-129.5
3/27/2010	3377.6	1.4	0.0	0.0	1.0	28.8	2634.6	111.4	6.3	6.2	33.7	555.4	5.6	55.7
3/28/2010	3616.6	0.1	0.0	0.0	1.0	28.8	2721.8	115.4	6.3	6.2	33.7	555.4	5.6	202.2
3/29/2010	3855.6	0.8	0.0	0.0	1.0	28.8	2952.9	120.2	6.3	6.2	33.7	599.0	6.0	161.9
3/30/2010	3924.6	0.3	0.0	0.0	1.0	28.8	3060.1	122.8	6.3	6.2	33.7	676.4	6.8	42.5
3/31/2010	3964.3	0.1	0.0	0.0	1.0	28.8	3059.4	122.8	6.3	6.2	33.7	785.5	7.9	-27.6
4/1/2010	3937.4	0.1	0.0	0.0	1.0	28.8	2992.3	121.6	6.3	13.7	33.7	866.8	8.7	-75.8
4/2/2010	3743.1	0.7	28.9	0.0	1.0	28.8	2878.5	118.3	6.3	13.7	33.7	894.5	8.9	-151.4
4/3/2010	3612.5	0.6	0.0	0.0	1.0	28.8	2741.9	115.5	6.3	13.7	33.7	797.4	8.0	-73.5
4/4/2010	3617.5	0.8	0.0	0.0	1.0	28.8	2703.7	115.4	6.3	13.7	33.7	739.8	7.4	28.1
4/5/2010	3839.9	1.2	0.0	0.0	1.0	28.8	2779.1	118.5	6.3	13.7	33.7	761.7	7.6	150.4
4/6/2010	4038.4	0.7	0.0	0.0	1.0	28.8	2934.5	122.6	6.3	13.7	33.7	815.2	8.2	134.8
4/7/2010	4272.1	1.3	0.0	0.0	1.0	28.8	3088.0	125.9	6.3	13.7	33.7	930.2	9.3	96.1
4/8/2010	4297.7	0.6	0.0	0.0	1.0	28.8	3154.2	126.8	6.3	13.7	33.7	1011.6	10.1	-28.2
4/9/2010	3875.9	0.1	125.2	0.0	1.0	28.8	3056.7	122.2	6.3	13.7	33.7	945.5	9.5	-156.5
4/10/2010	3644.8	0.2	0.0	0.0	1.0	28.8	2814.9	117.6	6.3	13.7	33.7	805.3	8.1	-124.7
4/11/2010	3651.1	1.3	0.0	0.0	1.0	28.8	2710.6	116.8	6.3	13.7	33.7	781.5	7.8	11.9
4/12/2010	3541.8	1.7	0.0	0.0	1.0	28.8	2726.1	115.3	6.3	13.7	33.7	801.3	8.0	-131.1

Table F1-1: RGCP Channel Water Budget Equation Analysis Segment 1

2010-12 Study Period

(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	MODFLOW Floodplain Recharge	Open Water Channel Evaporation	MODFLOW Riparian Evapo-transpiration	Diversions Authorized (Percha, Arrey, & Leasburg)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
4/13/2010	3450.7	0.1	0.0	0.0	1.0	28.8	2569.8	112.4	6.3	13.7	33.7	852.9	8.5	-116.8
4/14/2010	3409.3	0.3	0.0	0.0	1.0	28.8	2456.0	109.8	6.3	13.7	33.7	916.4	9.2	-105.6
4/15/2010	3309.0	1.0	8.6	0.0	1.0	28.8	2322.9	106.6	6.3	13.7	33.7	995.7	10.0	-140.4
4/16/2010	2809.1	0.4	241.8	0.0	1.0	28.8	2111.8	99.2	6.3	13.7	33.7	940.2	9.4	-133.1
4/17/2010	2435.1	2.6	171.3	0.0	1.0	28.8	1722.8	90.6	6.3	13.7	33.7	884.6	8.8	-121.7
4/18/2010	2443.9	0.3	0.0	0.0	1.0	28.8	1518.9	88.1	6.3	13.7	33.7	755.7	7.6	50.1
4/19/2010	2124.1	0.3	122.9	0.0	1.0	28.8	1593.5	85.5	6.3	13.7	33.7	654.5	6.5	-116.6
4/20/2010	2040.3	0.9	0.0	0.0	1.0	28.8	1395.7	81.7	6.3	13.7	33.7	608.9	6.1	-75.0
4/21/2010	2108.1	0.1	0.0	0.0	1.0	28.8	1350.2	81.7	6.3	13.7	33.7	612.7	6.1	33.6
4/22/2010	1999.0	0.3	14.9	0.0	1.0	28.8	1404.1	80.8	6.3	13.7	33.7	610.9	6.1	-111.5
4/23/2010	1903.4	2.6	0.0	0.0	1.0	28.8	1295.3	78.0	6.3	13.7	33.7	605.0	6.0	-102.3
4/24/2010	1859.2	1.0	0.0	0.0	1.0	28.8	1315.6	76.5	6.3	13.7	33.7	482.0	4.8	-42.5
4/25/2010	1861.2	0.2	0.0	0.0	1.0	28.8	1330.6	76.0	6.3	13.7	33.7	440.3	4.4	-13.9
4/26/2010	1931.7	1.9	0.0	0.0	1.0	28.8	1340.4	75.5	6.3	13.7	33.7	533.6	5.3	-45.1
4/27/2010	2053.2	1.5	0.0	0.0	1.0	28.8	1320.4	76.1	6.3	13.7	33.7	583.4	5.8	45.1
4/28/2010	2285.5	0.8	0.0	0.0	1.0	28.8	1370.6	79.5	6.3	13.7	33.7	656.5	6.6	149.2
4/29/2010	2533.6	1.2	0.0	0.0	1.0	28.8	1463.4	85.0	6.3	13.7	33.7	763.6	7.6	191.3
4/30/2010	2358.3	1.5	0.0	0.0	1.0	28.8	1641.0	86.7	6.3	13.7	33.7	678.3	6.8	-76.9
5/1/2010	2144.5	0.4	42.7	0.0	1.0	28.8	1575.4	83.6	6.3	21.5	33.7	612.9	6.1	-122.0
5/2/2010	2144.3	1.2	0.0	0.0	1.0	28.8	1440.2	81.9	6.3	21.5	33.7	606.9	6.1	-21.3
5/3/2010	2258.2	2.5	0.0	0.0	1.0	28.8	1440.2	83.2	6.3	21.5	33.7	643.9	6.4	55.4
5/4/2010	2421.2	1.4	0.0	0.0	1.0	28.8	1529.5	86.3	6.3	21.5	33.7	666.4	6.7	102.0
5/5/2010	2564.4	1.0	0.0	0.0	1.0	28.8	1662.7	90.2	6.3	21.5	33.7	670.3	6.7	103.7
5/6/2010	2545.2	0.8	0.0	0.0	1.0	28.8	1793.2	91.5	6.3	21.5	33.7	666.4	6.7	-43.5
5/7/2010	2517.0	1.6	0.0	0.0	1.0	28.8	1771.3	90.7	6.3	21.5	33.7	682.0	6.8	-64.0
5/8/2010	2571.0	0.3	0.0	0.0	1.0	28.8	1714.9	91.2	6.3	21.5	33.7	694.2	6.9	32.3
5/9/2010	2567.7	0.9	0.0	0.0	1.0	28.8	1750.1	92.0	6.3	21.5	33.7	706.1	7.1	-18.3
5/10/2010	2666.4	0.3	0.0	0.0	1.0	28.8	1767.5	92.4	6.3	21.5	33.7	765.6	7.7	1.9
5/11/2010	2827.5	1.1	0.0	0.0	1.0	28.8	1781.3	94.5	6.3	21.5	33.7	829.1	8.3	83.7
5/12/2010	3174.0	0.4	0.0	0.0	1.0	28.8	1905.5	100.7	6.3	21.5	33.7	862.8	8.6	265.1
5/13/2010	3312.0	0.7	0.0	0.0	1.0	28.8	2159.8	105.9	6.3	21.5	33.7	918.6	9.2	87.5
5/14/2010	3194.2	1.4	0.0	0.0	1.0	28.8	2248.8	105.4	6.3	21.5	33.7	926.3	9.3	-125.8
5/15/2010	3023.8	0.6	0.0	0.0	1.0	28.8	2118.3	103.9	6.3	21.5	33.7	801.3	8.0	-38.9
5/16/2010	2915.2	1.6	0.0	0.0	1.0	28.8	2141.5	102.9	6.3	21.5	33.7	704.1	7.0	-70.4
5/17/2010	2998.8	1.8	0.0	0.0	1.0	28.8	2114.8	101.9	6.3	21.5	33.7	781.5	7.8	-37.2
5/18/2010	2854.8	2.6	67.2	0.0	1.0	28.8	2026.6	98.7	6.3	21.5	33.7	896.5	9.0	-137.7
5/19/2010	2979.9	0.7	0.0	0.0	1.0	28.8	1821.9	97.3	6.3	21.5	33.7	999.1	10.0	20.6
5/20/2010	3153.7	1.1	0.0	0.0	1.0	28.8	1868.0	99.4	6.3	21.5	33.7	1077.7	10.8	67.4
5/21/2010	3046.5	0.5	0.0	0.0	1.0	28.8	1946.5	100.6	6.3	21.5	33.7	992.1	9.9	-33.9
5/22/2010	2904.2	1.5	0.0	0.0	1.0	28.8	2002.9	100.1	6.3	21.5	33.7	833.1	8.3	-70.4
5/23/2010	2899.9	1.7	0.0	0.0	1.0	28.8	1976.5	99.6	6.3	21.5	33.7	807.3	8.1	-21.6
5/24/2010	3053.8	1.6	0.0	0.0	1.0	28.8	1999.3	101.2	6.3	21.5	33.7	839.0	8.4	75.8
5/25/2010	3253.3	2.1	0.0	0.0	1.0	28.8	2115.2	104.4	6.3	21.5	33.7	882.6	8.8	112.6
5/26/2010	3266.6	0.5	0.0	0.0	1.0	28.8	2224.0	106.3	6.3	21.5	33.7	910.6	9.1	-14.6
5/27/2010	3096.4	3.0	18.2	0.0	1.0	28.8	2248.9	104.1	6.3	21.5	33.7	866.7	8.7	-142.5
5/28/2010	2825.2	1.8	52.6	0.0	1.0	28.8	2086.4	99.7	6.3	21.5	33.7	792.5	7.9	-138.5
5/29/2010	2703.9	0.8	0.0	0.0	1.0	28.8	1934.7	97.2	6.3	21.5	33.7	682.3	6.8	-48.0
5/30/2010	2703.7	1.1	0.0	0.0	1.0	28.8	1890.8	96.8	6.3	21.5	33.7	708.1	7.1	-29.7
5/31/2010	2798.7	0.8	0.0	0.0	1.0	28.8	1892.6	95.9	6.3	21.5	33.7	837.0	8.4	-66.1
6/1/2010	2978.1	1.3	0.0	0.0	1.0	28.8	1849.4	96.5	6.3	22.1	33.7	952.1	9.5	39.7
6/2/2010	3378.2	1.3	0.0	0.0	1.0	28.8	1978.2	103.3	6.3	22.1	33.7	912.2	9.1	344.4

Table F1-1: RGCP Channel Water Budget Equation Analysis Segment 1

2010-12 Study Period

(Units - Acre-Feet)

	Segment 1 - Caballo Dam to Leasburg Dam (Upper Reach)													
	Qcus	Pc	Qcin	Qirf	Qeff	Qgwrfl	Qcdfs	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	MODFLOW Floodplain Recharge	Open Water Channel Evaporation	MODFLOW Riparian Evapo- transpiration	Diversions Authorized (Percha, Arrey, & Leasburg)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
6/3/2010	3606.7	2.4	0.0	0.0	1.0	28.8	2259.6	110.9	6.3	22.1	33.7	1005.6	10.1	190.6
6/4/2010	3722.1	2.1	0.0	0.0	1.0	28.8	2459.9	116.0	6.3	22.1	33.7	961.2	9.6	145.2
6/5/2010	3809.8	0.1	0.0	0.0	1.0	28.8	2667.4	120.1	6.3	22.1	33.7	858.8	8.6	122.6
6/6/2010	3797.9	0.8	0.0	0.0	1.0	28.8	2797.3	121.4	6.3	22.1	33.7	872.7	8.7	-33.7
6/7/2010	4099.1	3.7	0.0	0.0	1.0	28.8	2824.4	124.5	6.3	22.1	33.7	930.2	9.3	182.0
6/8/2010	4281.2	0.6	0.0	0.0	1.0	28.8	3095.9	128.3	6.3	22.1	33.7	920.3	9.2	95.7
6/9/2010	4271.3	0.9	0.0	0.0	1.0	28.8	3209.9	128.7	6.3	22.1	33.7	964.0	9.6	-72.2
6/10/2010	4147.2	0.7	3.8	0.0	1.0	28.8	3114.4	126.0	6.3	22.1	33.7	1037.6	10.4	-169.0
6/11/2010	4035.7	2.2	0.0	0.0	1.0	28.8	2933.6	124.1	6.3	22.1	33.7	1000.1	10.0	-62.2
6/12/2010	4032.2	1.6	0.0	0.0	1.0	28.8	2898.0	124.8	6.3	22.1	33.7	922.3	9.2	47.1
6/13/2010	4033.2	0.8	0.0	0.0	1.0	28.8	3042.9	125.5	6.3	22.1	33.7	841.0	8.4	-16.1
6/14/2010	4193.6	1.0	0.0	0.0	1.0	28.8	3112.4	127.1	6.3	22.1	33.7	827.1	8.3	87.5
6/15/2010	4387.5	0.6	0.0	0.0	1.0	28.8	3150.1	130.3	6.3	22.1	33.7	958.0	9.6	107.9
6/16/2010	4244.3	1.6	0.0	0.0	1.0	28.8	3217.1	129.8	6.3	22.1	33.7	984.6	9.8	-127.8
6/17/2010	4456.7	2.4	0.0	0.0	1.0	28.8	3142.0	131.7	6.3	22.1	33.7	974.0	9.7	169.2
6/18/2010	4242.0	5.0	4.6	0.0	1.0	28.8	3293.5	131.0	6.3	22.1	33.7	954.0	9.5	-168.8
6/19/2010	4146.3	0.8	0.0	0.0	1.0	28.8	3192.9	128.5	6.3	22.1	33.7	858.8	8.6	-74.0
6/20/2010	4153.5	4.4	0.0	0.0	1.0	28.8	3167.8	127.9	6.3	22.1	33.7	831.1	8.3	-9.4
6/21/2010	4344.8	1.7	0.0	0.0	1.0	28.8	3183.8	128.6	6.3	22.1	33.7	966.0	9.7	26.2
6/22/2010	4517.5	2.8	0.0	0.0	1.0	28.8	3222.6	130.6	6.3	22.1	33.7	1051.2	10.5	73.0
6/23/2010	4519.9	3.3	0.0	0.0	1.0	28.8	3308.8	132.2	6.3	22.1	33.7	1019.6	10.2	20.0
6/24/2010	4512.1	3.0	0.0	0.0	1.0	28.8	3298.8	133.0	6.3	22.1	33.7	1047.3	10.5	-6.6
6/25/2010	4682.4	1.9	0.0	0.0	1.0	28.8	3323.4	135.6	6.3	22.1	33.7	1055.7	10.6	126.7
6/26/2010	4801.6	3.1	0.0	0.0	1.0	28.8	3480.4	138.8	6.3	22.1	33.7	1051.2	10.5	91.5
6/27/2010	4793.3	3.9	0.0	0.0	1.0	28.8	3568.8	139.6	6.3	22.1	33.7	1079.0	10.8	-33.2
6/28/2010	4706.6	3.7	0.0	0.0	1.0	28.8	3584.3	140.3	6.3	22.1	33.7	908.4	9.1	35.8
6/29/2010	4132.8	8.5	263.4	0.0	1.0	28.8	3532.4	133.8	6.3	22.1	33.7	864.8	8.6	-167.2
6/30/2010	3439.8	3.1	427.9	0.0	1.0	28.8	3065.4	120.2	6.3	22.1	33.7	803.3	8.0	-158.5
7/1/2010	3246.8	5.6	43.4	0.0	1.0	28.8	2587.1	111.2	6.3	16.4	33.7	704.1	7.0	-140.3
7/2/2010	2744.9	6.7	286.0	0.0	1.0	28.8	2389.2	102.5	6.3	16.4	33.7	642.7	6.4	-129.9
7/3/2010	2363.3	4.3	187.4	0.0	1.0	28.8	1968.6	93.0	6.3	16.4	33.7	583.1	5.8	-122.2
7/4/2010	2641.8	4.8	0.0	0.0	1.0	28.8	1747.3	93.1	6.3	16.4	33.7	547.4	5.5	226.6
7/5/2010	3100.0	9.3	0.0	0.0	1.0	28.8	2067.6	102.3	6.3	16.4	33.7	523.6	5.2	384.0
7/6/2010	3417.1	5.1	0.0	0.0	1.0	28.8	2435.7	111.1	6.3	16.4	33.7	583.1	5.8	259.9
7/7/2010	3962.8	7.8	0.0	0.0	1.0	28.8	2740.6	119.6	6.3	16.4	33.7	744.0	7.4	332.3
7/8/2010	4188.7	6.5	0.0	0.0	1.0	28.8	3045.8	126.3	6.3	16.4	33.7	819.2	8.2	169.1
7/9/2010	4128.7	5.8	0.0	0.0	1.0	28.8	3177.1	127.9	6.3	16.4	33.7	811.2	8.1	-16.6
7/10/2010	4169.0	4.6	0.0	0.0	1.0	28.8	3138.8	128.7	6.3	16.4	33.7	827.1	8.3	44.1
7/11/2010	3676.4	4.9	139.6	0.0	1.0	28.8	3186.2	124.6	6.3	16.4	33.7	630.7	6.3	-153.6
7/12/2010	3235.6	5.3	146.3	0.0	1.0	28.8	2885.1	116.8	6.3	16.4	33.7	497.9	5.0	-144.2
7/13/2010	3334.2	6.7	0.0	0.0	1.0	28.8	2618.7	115.0	6.3	16.4	33.7	505.8	5.1	69.7
7/14/2010	3525.9	4.4	0.0	0.0	1.0	28.8	2686.7	118.5	6.3	16.4	33.7	545.8	5.5	147.3
7/15/2010	3786.8	13.7	0.0	0.0	1.0	28.8	2794.3	123.8	6.3	16.4	33.7	628.8	6.3	220.8
7/16/2010	3790.6	3.4	0.0	0.0	1.0	28.8	2955.1	124.3	6.3	16.4	33.7	793.9	7.9	-113.9
7/17/2010	3787.7	3.8	0.0	0.0	1.0	28.8	2919.3	122.2	6.3	16.4	33.7	789.4	7.9	-73.9
7/18/2010	3783.7	6.5	0.0	0.0	1.0	28.8	2880.8	121.6	6.3	16.4	33.7	753.7	7.5	0.0
7/19/2010	4005.8	6.3	0.0	0.0	1.0	28.8	2891.6	120.9	6.3	16.4	33.7	1015.5	10.2	-52.7
7/20/2010	4172.7	7.0	0.0	0.0	1.0	28.8	2891.5	122.0	6.3	16.4	33.7	1037.4	10.4	91.8
7/21/2010	4247.1	8.3	0.0	0.0	1.0	28.8	3017.0	124.3	6.3	16.4	33.7	1011.6	10.1	65.8
7/22/2010	4159.4	7.8	0.0	0.0	1.0	28.8	3097.2	125.3	6.3	16.4	33.7	904.7	9.0	4.4
7/23/2010	3955.4	6.4	0.0	0.0	1.0	28.8	3102.5	123.9	6.3	16.4	33.7	793.4	7.9	-92.6



Table F1-1: RGCP Channel Water Budget Equation Analysis Segment 1

2010-12 Study Period

(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	MODFLOW Floodplain Recharge	Open Water Channel Evaporation	MODFLOW Riparian Evapo- transpiration	Diversions Authorized (Percha, Arrey, & Leasburg)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
7/24/2010	3122.7	7.6	502.9	0.0	1.0	28.8	2987.9	112.5	6.3	16.4	33.7	638.7	6.4	-138.9
7/25/2010	3511.8	6.2	0.0	0.0	1.0	28.8	2477.9	114.0	6.3	16.4	33.7	386.8	3.9	508.9
7/26/2010	2474.8	6.5	726.9	0.0	1.0	28.8	2956.8	105.4	6.3	16.4	33.7	246.0	2.5	-129.0
7/27/2010	2309.5	5.7	46.5	0.0	1.0	28.8	2158.7	92.6	6.3	16.4	33.7	198.3	2.0	-116.5
7/28/2010	2668.3	6.0	0.0	0.0	1.0	28.8	2017.0	96.0	6.3	16.4	33.7	222.1	2.2	310.3
7/29/2010	2639.7	7.6	0.0	0.0	1.0	28.8	2325.4	99.4	6.3	16.4	33.7	220.2	2.2	-26.5
7/30/2010	2466.0	8.7	34.9	0.0	1.0	28.8	2287.7	96.6	6.3	16.4	33.7	214.2	2.1	-117.6
7/31/2010	2682.9	6.7	0.0	0.0	1.0	28.8	2175.9	97.8	6.3	16.4	33.7	206.3	2.1	180.9
8/1/2010	2685.0	7.2	0.0	0.0	1.0	28.8	2362.0	100.0	6.3	15.5	33.7	206.3	2.1	-3.7
8/2/2010	2798.3	8.7	0.0	0.0	1.0	28.8	2377.6	101.6	6.3	15.5	33.7	202.3	2.0	97.8
8/3/2010	3088.2	8.8	0.0	0.0	1.0	28.8	2422.4	105.4	6.3	15.5	33.7	376.9	3.8	162.9
8/4/2010	3501.2	6.8	0.0	0.0	1.0	28.8	2579.4	110.3	6.3	15.5	33.7	614.9	6.1	171.7
8/5/2010	3704.1	6.6	0.0	0.0	1.0	28.8	2667.7	114.3	6.3	15.5	33.7	785.5	7.9	109.7
8/6/2010	3816.0	5.4	0.0	0.0	1.0	28.8	2714.6	117.1	6.3	15.5	33.7	880.7	8.8	74.6
8/7/2010	3910.8	6.8	0.0	0.0	1.0	28.8	2816.1	119.8	6.3	15.5	33.7	862.8	8.6	84.6
8/8/2010	3900.6	5.6	0.0	0.0	1.0	28.8	2921.5	121.0	6.3	15.5	33.7	831.1	8.3	-1.2
8/9/2010	4185.3	7.8	0.0	0.0	1.0	28.8	2942.4	122.7	6.3	15.5	33.7	997.6	10.0	94.8
8/10/2010	4315.0	7.3	0.0	0.0	1.0	28.8	3094.0	124.2	6.3	15.5	33.7	1048.4	10.5	19.6
8/11/2010	4219.7	8.8	0.0	0.0	1.0	28.8	3117.8	123.1	6.3	15.5	33.7	1029.4	10.3	-77.7
8/12/2010	4204.8	8.6	0.0	0.0	1.0	28.8	3029.6	122.0	6.3	15.5	33.7	1049.8	10.5	-24.1
8/13/2010	4083.3	10.2	0.0	0.0	1.0	28.8	3007.2	120.0	6.3	15.5	33.7	1043.3	10.4	-113.0
8/14/2010	3964.0	7.5	0.0	0.0	1.0	28.8	2938.3	120.4	6.3	15.5	33.7	807.3	8.1	71.9
8/15/2010	3952.3	7.5	0.0	0.0	1.0	28.8	3028.5	121.2	6.3	15.5	33.7	783.5	7.8	-6.8
8/16/2010	4044.2	9.4	0.0	0.0	1.0	28.8	3039.7	122.2	6.3	15.5	33.7	799.3	8.0	58.9
8/17/2010	4132.1	3.3	0.0	0.0	1.0	28.8	3096.4	123.7	6.3	15.5	33.7	825.1	8.3	56.3
8/18/2010	4120.7	8.4	0.0	0.0	1.0	28.8	3124.7	123.9	6.3	15.5	33.7	868.4	8.7	-22.3
8/19/2010	3928.1	6.0	0.0	0.0	1.0	28.8	3087.9	122.8	6.3	15.5	33.7	747.8	7.5	-57.6
8/20/2010	4022.6	7.0	0.0	0.0	1.0	28.8	3026.7	122.4	6.3	15.5	33.7	843.0	8.4	3.4
8/21/2010	4179.1	11.8	0.0	0.0	1.0	28.8	3053.0	124.8	6.3	15.5	33.7	858.8	8.6	120.0
8/22/2010	4163.5	5.7	0.0	0.0	1.0	28.8	3183.2	125.6	6.3	15.5	33.7	841.0	8.4	-14.7
8/23/2010	3924.5	15.0	78.5	0.0	1.0	28.8	3147.1	121.8	6.3	15.5	33.7	856.9	8.6	-142.1
8/24/2010	3410.1	10.0	146.4	0.0	1.0	28.8	3075.5	114.7	6.3	15.5	33.7	482.0	4.8	-136.2
8/25/2010	3019.2	5.1	187.9	0.0	1.0	28.8	2829.3	106.3	6.3	15.5	33.7	378.8	3.8	-131.6
8/26/2010	3012.5	5.5	18.4	0.0	1.0	28.8	2421.0	100.8	6.3	15.5	33.7	610.9	6.1	-128.1
8/27/2010	3150.7	4.6	0.0	0.0	1.0	28.8	2305.0	101.3	6.3	15.5	33.7	622.8	6.2	94.3
8/28/2010	3192.7	2.1	0.0	0.0	1.0	28.8	2396.1	103.9	6.3	15.5	33.7	601.0	6.0	62.2
8/29/2010	3059.6	6.6	0.0	0.0	1.0	28.8	2494.8	103.2	6.3	15.5	33.7	529.6	5.3	-92.3
8/30/2010	2870.3	7.3	89.8	0.0	1.0	28.8	2401.8	98.6	6.3	15.5	33.7	559.3	5.6	-123.6
8/31/2010	2539.3	5.1	190.4	0.0	1.0	28.8	2121.8	91.2	6.3	15.5	33.7	608.9	6.1	-118.9
9/1/2010	2503.1	5.2	0.0	0.0	1.0	28.8	1799.2	86.5	6.3	12.4	33.7	670.4	6.7	-77.2
9/2/2010	2566.5	5.6	0.0	0.0	1.0	28.8	1652.9	86.5	6.3	12.4	33.7	763.6	7.6	38.8
9/3/2010	2824.4	3.9	0.0	0.0	1.0	28.8	1676.5	88.8	6.3	12.4	33.7	936.2	9.4	94.8
9/4/2010	3250.4	4.4	0.0	0.0	1.0	28.8	1818.2	95.5	6.3	12.4	33.7	987.8	9.9	320.8
9/5/2010	3221.8	8.2	0.0	0.0	1.0	28.8	2143.6	99.6	6.3	12.4	33.7	969.9	9.7	-15.5
9/6/2010	3192.5	4.6	0.0	0.0	1.0	28.8	2142.9	99.2	6.3	12.4	33.7	956.0	9.6	-33.2
9/7/2010	3288.2	5.9	0.0	0.0	1.0	28.8	2128.4	100.4	6.3	12.4	33.7	956.0	9.6	77.1
9/8/2010	3224.4	2.8	0.0	0.0	1.0	28.8	2200.4	100.5	6.3	12.4	33.7	957.8	9.6	-63.6
9/9/2010	2599.2	4.3	412.8	0.0	1.0	28.8	2104.6	91.2	6.3	12.4	33.7	908.4	9.1	-119.7
9/10/2010	1886.0	5.2	449.4	0.0	1.0	28.8	1834.6	75.8	6.3	12.4	33.7	501.8	5.0	-99.3
9/11/2010	1562.1	4.7	35.2	0.0	1.0	28.8	1443.5	66.7	6.3	12.4	33.7	154.7	1.5	-87.3
9/12/2010	1211.7	11.0	165.6	0.0	1.0	28.8	1334.7	62.0	6.3	12.4	33.7	43.6	0.4	-75.2

Table F1-1: RGCP Channel Water Budget Equation Analysis Segment 1

2010-12 Study Period

(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	MODFLOW Floodplain Recharge	Open Water Channel Evaporation	MODFLOW Riparian Evapo- transpiration	Diversions Authorized (Percha, Arrey, & Leasburg)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
9/13/2010	1038.5	9.0	91.4	0.0	1.0	28.8	1130.9	56.4	6.3	12.4	33.7	0.0	0.0	-71.1
9/14/2010	978.5	7.0	19.3	0.0	1.0	28.8	998.9	52.9	6.3	12.4	33.7	0.0	0.0	-69.5
9/15/2010	932.2	7.5	0.0	0.0	1.0	28.8	930.9	50.8	6.3	12.4	33.7	0.0	0.0	-64.7
9/16/2010	810.6	2.9	71.2	0.0	1.0	28.8	882.9	48.1	6.3	12.4	33.7	0.0	0.0	-68.9
9/17/2010	756.0	3.5	41.3	0.0	1.0	28.8	798.3	45.0	6.3	12.4	33.7	0.0	0.0	-65.2
9/18/2010	801.1	3.1	0.0	0.0	1.0	28.8	749.3	44.6	6.3	12.4	33.7	0.0	0.0	-12.3
9/19/2010	803.0	7.0	0.0	0.0	1.0	28.8	769.9	45.6	6.3	12.4	33.7	0.0	0.0	-28.1
9/20/2010	961.0	1.7	0.0	0.0	1.0	28.8	766.5	48.1	6.3	12.4	33.7	0.0	0.0	125.4
9/21/2010	1118.9	5.5	0.0	0.0	1.0	28.8	865.1	54.0	6.3	12.4	33.7	0.0	0.0	182.7
9/22/2010	1115.2	5.8	0.0	0.0	1.0	28.8	1024.5	57.7	6.3	12.4	33.7	0.0	0.0	16.2
9/23/2010	799.1	7.3	247.2	0.0	1.0	28.8	1047.3	53.3	6.3	12.4	33.7	0.0	0.0	-69.7
9/24/2010	554.7	8.0	269.8	0.0	1.0	28.8	825.5	44.4	6.3	12.4	33.7	0.0	0.0	-60.0
9/25/2010	553.2	9.7	118.6	0.0	1.0	28.8	672.9	38.8	6.3	12.4	33.7	0.0	0.0	-52.8
9/26/2010	551.3	4.9	57.4	0.0	1.0	28.8	609.8	38.0	6.3	12.4	33.7	0.0	0.0	-56.7
9/27/2010	549.5	2.9	58.4	0.0	1.0	28.8	608.9	37.8	6.3	12.4	33.7	0.0	0.0	-58.6
9/28/2010	689.6	2.5	0.0	0.0	1.0	28.8	608.1	39.7	6.3	12.4	33.7	0.0	0.0	21.6
9/29/2010	926.7	6.7	0.0	0.0	1.0	28.8	644.8	46.7	6.3	12.4	33.7	0.0	0.0	219.4
9/30/2010	837.9	3.8	0.0	0.0	1.0	28.8	807.7	50.9	6.3	12.4	33.7	0.0	0.0	-39.6
10/1/2010	800.8	2.3	21.9	0.0	1.0	28.8	823.7	48.8	6.3	0.0	33.7	0.0	0.0	-57.7
10/2/2010	958.7	3.8	0.0	0.0	1.0	28.8	772.4	50.2	6.3	0.0	33.7	0.0	0.0	129.6
10/3/2010	954.4	2.9	0.0	0.0	1.0	28.8	860.6	53.2	6.3	0.0	33.7	0.0	0.0	33.2
10/4/2010	944.6	3.7	0.0	0.0	1.0	28.8	893.1	53.0	6.3	0.0	33.7	0.0	0.0	-8.0
10/5/2010	775.0	4.2	108.9	0.0	1.0	28.8	884.9	50.2	6.3	0.0	33.7	0.0	0.0	-57.3
10/6/2010	593.7	3.2	188.4	0.0	1.0	28.8	783.1	44.3	6.3	0.0	33.7	0.0	0.0	-52.3
10/7/2010	387.0	5.1	290.0	0.0	1.0	28.8	678.0	36.9	6.3	0.0	33.7	0.0	0.0	-43.0
10/8/2010	155.4	2.0	0.0	0.0	1.0	28.8	103.4	27.7	6.3	0.0	33.7	0.0	0.0	16.0
10/9/2010	155.5	3.4	0.0	0.0	1.0	28.8	45.7	21.4	6.3	0.0	33.7	0.0	0.0	81.6
10/10/2010	155.6	2.9	0.0	0.0	1.0	28.8	13.3	19.5	6.3	0.0	33.7	0.0	0.0	115.5
10/11/2010	155.7	5.8	0.0	0.0	1.0	28.8	8.6	19.7	6.3	0.0	33.7	0.0	0.0	123.0
10/12/2010	155.8	5.2	0.0	0.0	1.0	28.8	8.5	19.5	6.3	0.0	33.7	0.0	0.0	122.8
10/13/2010	155.9	2.8	0.0	0.0	1.0	28.8	8.5	19.8	6.3	0.0	33.7	0.0	0.0	120.2
10/14/2010	156.0	3.9	0.0	0.0	1.0	28.8	8.7	19.7	6.3	0.0	33.7	0.0	0.0	121.4
10/15/2010	156.1	2.8	0.0	0.0	1.0	28.8	8.5	19.7	6.3	0.0	33.7	0.0	0.0	120.4
10/16/2010	156.3	4.1	0.0	0.0	1.0	28.8	8.6	19.7	6.3	0.0	33.7	0.0	0.0	121.9
10/17/2010	156.4	1.6	0.0	0.0	1.0	28.8	8.7	19.7	6.3	0.0	33.7	0.0	0.0	119.5
10/18/2010	156.5	1.9	0.0	0.0	1.0	28.8	8.6	19.7	6.3	0.0	33.7	0.0	0.0	119.9
10/19/2010	156.6	5.2	0.0	0.0	1.0	28.8	8.7	19.6	6.3	0.0	33.7	0.0	0.0	123.3
10/20/2010	156.7	2.3	0.0	0.0	1.0	28.8	8.8	19.7	6.3	0.0	33.7	0.0	0.0	120.3
10/21/2010	158.7	3.0	0.0	0.0	1.0	28.8	8.8	19.6	6.3	0.0	33.7	0.0	0.0	123.1
10/22/2010	158.7	4.2	0.0	0.0	1.0	28.8	8.8	19.7	6.3	0.0	33.7	0.0	0.0	124.2
10/23/2010	158.7	6.2	0.0	0.0	1.0	28.8	9.1	19.6	6.3	0.0	33.7	0.0	0.0	126.0
10/24/2010	158.7	2.6	0.0	0.0	1.0	28.8	9.2	19.7	6.3	0.0	33.7	0.0	0.0	122.2
10/25/2010	158.7	2.5	0.0	0.0	1.0	28.8	9.2	19.7	6.3	0.0	33.7	0.0	0.0	122.1
10/26/2010	154.3	2.5	0.0	0.0	1.0	28.8	9.4	19.5	6.3	0.0	33.7	0.0	0.0	117.8
10/27/2010	154.5	5.0	0.0	0.0	1.0	28.8	9.3	19.5	6.3	0.0	33.7	0.0	0.0	120.5
10/28/2010	154.6	3.7	0.0	0.0	1.0	28.8	8.5	19.4	6.3	0.0	33.7	0.0	0.0	120.2
10/29/2010	154.6	1.5	0.0	0.0	1.0	28.8	8.3	19.5	6.3	0.0	33.7	0.0	0.0	118.1
10/30/2010	154.6	2.8	0.0	0.0	1.0	28.8	8.3	19.4	6.3	0.0	33.7	0.0	0.0	119.5
10/31/2010	154.7	4.4	0.0	0.0	1.0	28.8	8.4	19.4	6.3	0.0	33.7	0.0	0.0	121.1
11/1/2010	154.8	2.5	0.0	0.0	1.0	51.7	8.5	19.4	0.1	0.0	11.5	0.0	0.0	170.6
11/2/2010	154.9	2.4	0.0	0.0	1.0	51.7	8.4	19.5	0.1	0.0	11.5	0.0	0.0	170.6

Table F1-1: RGCP Channel Water Budget Equation Analysis Segment 1

2010-12 Study Period

(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	MODFLOW Floodplain Recharge	Open Water Channel Evaporation	MODFLOW Riparian Evapo- transpiration	Diversions Authorized (Percha, Arrey, & Leasburg)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
11/3/2010	155.0	3.1	0.0	0.0	1.0	51.7	8.4	19.6	0.1	0.0	11.5	0.0	0.0	171.3
11/4/2010	155.0	2.2	0.0	0.0	1.0	51.7	8.4	19.6	0.1	0.0	11.5	0.0	0.0	170.4
11/5/2010	155.1	0.8	0.0	0.0	1.0	51.7	8.4	19.6	0.1	0.0	11.5	0.0	0.0	169.1
11/6/2010	155.2	0.4	0.0	0.0	1.0	51.7	8.4	19.6	0.1	0.0	11.5	0.0	0.0	168.8
11/7/2010	155.2	1.2	0.0	0.0	1.0	51.7	8.5	19.5	0.1	0.0	11.5	0.0	0.0	169.6
11/8/2010	155.3	2.1	0.0	0.0	1.0	51.7	8.5	19.5	0.1	0.0	11.5	0.0	0.0	170.5
11/9/2010	155.3	0.4	0.0	0.0	1.0	51.7	8.5	19.4	0.1	0.0	11.5	0.0	0.0	169.1
11/10/2010	155.5	0.9	0.0	0.0	1.0	51.7	8.6	19.5	0.1	0.0	11.5	0.0	0.0	169.5
11/11/2010	155.5	1.0	0.0	0.0	1.0	51.7	8.5	19.3	0.1	0.0	11.5	0.0	0.0	169.8
11/12/2010	155.6	3.8	0.0	0.0	1.0	51.7	8.6	19.5	0.1	0.0	11.5	0.0	0.0	172.5
11/13/2010	155.6	1.3	0.0	0.0	1.0	51.7	8.6	19.3	0.1	0.0	11.5	0.0	0.0	170.2
11/14/2010	155.7	2.5	0.0	0.0	1.0	51.7	8.7	19.3	0.1	0.0	11.5	0.0	0.0	171.3
11/15/2010	156.7	1.4	0.0	0.0	1.0	51.7	8.7	19.2	0.1	0.0	11.5	0.0	0.0	171.3
11/16/2010	157.4	2.1	0.0	0.0	1.0	51.7	8.7	19.3	0.1	0.0	11.5	0.0	0.0	172.7
11/17/2010	157.3	1.6	0.0	0.0	1.0	51.7	8.9	19.3	0.1	0.0	11.5	0.0	0.0	171.9
11/18/2010	157.4	1.1	0.0	0.0	1.0	51.7	9.0	19.4	0.1	0.0	11.5	0.0	0.0	171.3
11/19/2010	157.6	0.8	0.0	0.0	1.0	51.7	9.0	19.3	0.1	0.0	11.5	0.0	0.0	171.3
11/20/2010	157.5	0.3	0.0	0.0	1.0	51.7	9.0	19.3	0.1	0.0	11.5	0.0	0.0	170.7
11/21/2010	157.9	0.2	0.0	0.0	1.0	51.7	9.1	19.3	0.1	0.0	11.5	0.0	0.0	170.8
11/22/2010	158.0	1.1	0.0	0.0	1.0	51.7	9.1	19.2	0.1	0.0	11.5	0.0	0.0	172.0
11/23/2010	158.3	1.0	0.0	0.0	1.0	51.7	9.2	19.3	0.1	0.0	11.5	0.0	0.0	172.0
11/24/2010	158.3	3.0	0.0	0.0	1.0	51.7	9.3	19.2	0.1	0.0	11.5	0.0	0.0	174.0
11/25/2010	158.3	2.4	0.0	0.0	1.0	51.7	9.3	19.3	0.1	0.0	11.5	0.0	0.0	173.3
11/26/2010	158.0	1.3	0.0	0.0	1.0	51.7	9.3	19.3	0.1	0.0	11.5	0.0	0.0	171.9
11/27/2010	158.1	1.1	0.0	0.0	1.0	51.7	9.3	19.2	0.1	0.0	11.5	0.0	0.0	171.9
11/28/2010	158.1	2.2	0.0	0.0	1.0	51.7	9.2	19.2	0.1	0.0	11.5	0.0	0.0	173.1
11/29/2010	158.4	2.0	0.0	0.0	1.0	51.7	9.2	19.2	0.1	0.0	11.5	0.0	0.0	173.1
11/30/2010	158.3	1.1	0.0	0.0	1.0	51.7	9.2	19.3	0.1	0.0	11.5	0.0	0.0	172.0
12/1/2010	158.5	1.9	0.0	0.0	1.0	51.7	9.2	19.3	0.1	0.0	11.5	0.0	0.0	173.1
12/2/2010	159.0	2.2	0.0	0.0	1.0	51.7	9.3	19.3	0.1	0.0	11.5	0.0	0.0	173.9
12/3/2010	159.1	0.7	0.0	0.0	1.0	51.7	9.3	19.3	0.1	0.0	11.5	0.0	0.0	172.3
12/4/2010	159.1	2.3	0.0	0.0	1.0	51.7	9.5	19.2	0.1	0.0	11.5	0.0	0.0	173.9
12/5/2010	159.2	2.4	0.0	0.0	1.0	51.7	9.4	19.3	0.1	0.0	11.5	0.0	0.0	174.1
12/6/2010	159.4	2.2	0.0	0.0	1.0	51.7	9.5	19.3	0.1	0.0	11.5	0.0	0.0	174.0
12/7/2010	159.2	1.6	0.0	0.0	1.0	51.7	9.5	19.2	0.1	0.0	11.5	0.0	0.0	173.2
12/8/2010	159.1	1.6	0.0	0.0	1.0	51.7	9.5	19.3	0.1	0.0	11.5	0.0	0.0	173.0
12/9/2010	159.1	6.0	0.0	0.0	1.0	51.7	9.5	19.2	0.1	0.0	11.5	0.0	0.0	177.6
12/10/2010	159.2	1.4	0.0	0.0	1.0	51.7	9.5	19.1	0.1	0.0	11.5	0.0	0.0	173.1
12/11/2010	159.5	2.9	0.0	0.0	1.0	51.7	9.5	19.3	0.1	0.0	11.5	0.0	0.0	174.8
12/12/2010	159.7	1.8	0.0	0.0	1.0	51.7	9.6	19.1	0.1	0.0	11.5	0.0	0.0	173.9
12/13/2010	159.8	2.6	0.0	0.0	1.0	51.7	9.5	19.3	0.1	0.0	11.5	0.0	0.0	174.8
12/14/2010	159.9	2.4	0.0	0.0	1.0	51.7	9.6	19.7	0.1	0.0	11.5	0.0	0.0	174.3
12/15/2010	160.0	4.1	0.0	0.0	1.0	51.7	9.6	19.6	0.1	0.0	11.5	0.0	0.0	176.1
12/16/2010	160.1	2.4	0.0	0.0	1.0	51.7	9.5	19.8	0.1	0.0	11.5	0.0	0.0	174.4
12/17/2010	159.9	1.7	0.0	0.0	1.0	51.7	9.6	19.8	0.1	0.0	11.5	0.0	0.0	173.4
12/18/2010	160.1	2.5	0.0	0.0	1.0	51.7	9.6	19.6	0.1	0.0	11.5	0.0	0.0	174.5
12/19/2010	133.3	2.6	0.0	0.0	1.0	51.7	9.6	19.3	0.1	0.0	11.5	0.0	0.0	148.3
12/20/2010	160.0	4.4	0.0	0.0	1.0	51.7	9.5	18.9	0.1	0.0	11.5	0.0	0.0	177.2
12/21/2010	160.1	1.9	0.0	0.0	1.0	51.7	4.9	19.1	0.1	0.0	11.5	0.0	0.0	179.2
12/22/2010	160.4	1.6	0.0	0.0	1.0	51.7	8.6	19.6	0.1	0.0	11.5	0.0	0.0	175.0
12/23/2010	160.6	2.6	0.0	0.0	1.0	51.7	9.6	19.6	0.1	0.0	11.5	0.0	0.0	175.1



Table F1-1: RGCP Channel Water Budget Equation Analysis Segment 1

2010-12 Study Period

(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	MODFLOW Floodplain Recharge	Open Water Channel Evaporation	MODFLOW Riparian Evapo- transpiration	Diversions Authorized (Percha, Arrey, & Leasburg)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
12/24/2010	160.7	0.7	0.0	0.0	1.0	51.7	9.6	19.5	0.1	0.0	11.5	0.0	0.0	173.5
12/25/2010	160.8	2.4	0.0	0.0	1.0	51.7	9.7	19.6	0.1	0.0	11.5	0.0	0.0	175.0
12/26/2010	160.9	4.1	0.0	0.0	1.0	51.7	9.7	19.6	0.1	0.0	11.5	0.0	0.0	176.9
12/27/2010	160.9	2.5	0.0	0.0	1.0	51.7	9.8	19.4	0.1	0.0	11.5	0.0	0.0	175.4
12/28/2010	160.9	2.5	0.0	0.0	1.0	51.7	9.8	19.5	0.1	0.0	11.5	0.0	0.0	175.3
12/29/2010	160.9	2.5	0.0	0.0	1.0	51.7	9.8	19.5	0.1	0.0	11.5	0.0	0.0	175.2
12/30/2010	161.0	1.3	0.0	0.0	1.0	51.7	9.8	19.4	0.1	0.0	11.5	0.0	0.0	174.3
12/31/2010	160.9	0.8	0.0	0.0	1.0	51.7	9.8	19.4	0.1	0.0	11.5	0.0	0.0	173.7
1/1/2011	161.1	1.1	0.0	0.0	1.0	51.7	9.8	19.5	0.1	0.0	11.5	0.0	0.0	174.1
1/2/2011	161.2	1.7	0.0	0.0	1.0	51.7	9.8	19.3	0.1	0.0	11.5	0.0	0.0	174.9
1/3/2011	161.2	1.5	0.0	0.0	1.0	51.7	9.8	19.3	0.1	0.0	11.5	0.0	0.0	174.7
1/4/2011	161.5	1.3	0.0	0.0	1.0	51.7	9.9	19.4	0.1	0.0	11.5	0.0	0.0	174.7
1/5/2011	161.5	1.6	0.0	0.0	1.0	51.7	10.0	19.3	0.1	0.0	11.5	0.0	0.0	175.0
1/6/2011	175.4	1.9	0.0	0.0	1.0	51.7	10.0	19.5	0.1	0.0	11.5	0.0	0.0	189.0
1/7/2011	215.4	1.5	0.0	0.0	1.0	51.7	10.1	20.4	0.1	0.0	11.5	0.0	0.0	227.6
1/8/2011	215.4	2.5	0.0	0.0	1.0	51.7	12.7	21.5	0.1	0.0	11.5	0.0	0.0	224.9
1/9/2011	215.5	1.6	0.0	0.0	1.0	51.7	18.8	22.2	0.1	0.0	11.5	0.0	0.0	217.2
1/10/2011	216.8	1.0	0.0	0.0	1.0	51.7	19.8	22.3	0.1	0.0	11.5	0.0	0.0	216.9
1/11/2011	218.9	1.7	0.0	0.0	1.0	51.7	19.9	22.3	0.1	0.0	11.5	0.0	0.0	219.5
1/12/2011	217.1	2.6	0.0	0.0	1.0	51.7	20.0	22.3	0.1	0.0	11.5	0.0	0.0	218.6
1/13/2011	214.0	1.2	0.0	0.0	1.0	51.7	20.3	22.3	0.1	0.0	11.5	0.0	0.0	213.9
1/14/2011	214.4	2.1	0.0	0.0	1.0	51.7	20.2	22.2	0.1	0.0	11.5	0.0	0.0	215.3
1/15/2011	214.5	1.1	0.0	0.0	1.0	51.7	19.7	22.1	0.1	0.0	11.5	0.0	0.0	214.9
1/16/2011	214.8	0.4	0.0	0.0	1.0	51.7	19.7	22.1	0.1	0.0	11.5	0.0	0.0	214.6
1/17/2011	214.8	2.3	0.0	0.0	1.0	51.7	19.7	22.1	0.1	0.0	11.5	0.0	0.0	216.5
1/18/2011	214.8	2.6	0.0	0.0	1.0	51.7	19.7	22.1	0.1	0.0	11.5	0.0	0.0	216.9
1/19/2011	120.1	0.8	0.0	0.0	1.0	51.7	19.7	20.8	0.1	0.0	11.5	0.0	0.0	121.5
1/20/2011	84.1	1.2	0.0	0.0	1.0	51.7	19.0	17.4	0.1	0.0	11.5	0.0	0.0	90.0
1/21/2011	0.0	2.0	4.3	0.0	1.0	51.7	5.4	0.0	0.1	0.0	11.5	0.0	0.0	42.2
1/22/2011	0.0	1.2	4.8	0.0	1.0	51.7	5.9	0.0	0.1	0.0	11.5	0.0	0.0	41.3
1/23/2011	0.0	0.4	5.2	0.0	1.0	51.7	6.2	0.0	0.1	0.0	11.5	0.0	0.0	40.6
1/24/2011	0.0	0.8	5.3	0.0	1.0	51.7	6.3	0.0	0.1	0.0	11.5	0.0	0.0	40.9
1/25/2011	0.0	2.0	5.4	0.0	1.0	51.7	6.4	0.0	0.1	0.0	11.5	0.0	0.0	42.2
1/26/2011	43.4	1.3	0.0	0.0	1.0	51.7	6.3	16.8	0.1	0.0	11.5	0.0	0.0	62.8
1/27/2011	273.7	1.6	0.0	0.0	1.0	51.7	6.2	19.7	0.1	0.0	11.5	0.0	0.0	290.5
1/28/2011	183.4	2.7	0.0	0.0	1.0	51.7	6.2	22.3	0.1	0.0	11.5	0.0	0.0	198.7
1/29/2011	183.4	2.0	0.0	0.0	1.0	51.7	23.4	22.4	0.1	0.0	11.5	0.0	0.0	180.9
1/30/2011	183.5	1.9	0.0	0.0	1.0	51.7	16.5	21.4	0.1	0.0	11.5	0.0	0.0	188.6
1/31/2011	183.6	2.8	0.0	0.0	1.0	51.7	14.0	21.4	0.1	0.0	11.5	0.0	0.0	192.2
2/1/2011	183.7	1.2	0.0	0.0	1.0	51.7	14.0	21.3	0.1	0.0	11.5	0.0	0.0	190.7
2/2/2011	183.8	1.6	0.0	0.0	1.0	51.7	14.1	21.3	0.1	0.0	11.5	0.0	0.0	191.2
2/3/2011	183.5	1.1	0.0	0.0	1.0	51.7	14.0	21.2	0.1	0.0	11.5	0.0	0.0	190.4
2/4/2011	183.1	1.2	0.0	0.0	1.0	51.7	14.1	21.3	0.1	0.0	11.5	0.0	0.0	190.1
2/5/2011	183.1	1.5	0.0	0.0	1.0	51.7	14.1	21.2	0.1	0.0	11.5	0.0	0.0	190.4
2/6/2011	183.1	0.7	0.0	0.0	1.0	51.7	14.0	21.1	0.1	0.0	11.5	0.0	0.0	189.9
2/7/2011	183.2	0.5	0.0	0.0	1.0	51.7	14.0	21.1	0.1	0.0	11.5	0.0	0.0	189.7
2/8/2011	265.6	1.9	0.0	0.0	1.0	51.7	14.0	22.1	0.1	0.0	11.5	0.0	0.0	272.6
2/9/2011	178.9	2.2	0.0	0.0	1.0	51.7	14.8	22.9	0.1	0.0	11.5	0.0	0.0	184.6
2/10/2011	261.8	1.3	0.0	0.0	1.0	51.7	25.5	22.9	0.1	0.0	11.5	0.0	0.0	255.9
2/11/2011	168.5	1.1	0.0	0.0	1.0	51.7	16.3	22.6	0.1	0.0	11.5	0.0	0.0	171.9
2/12/2011	168.6	2.1	0.0	0.0	1.0	51.7	24.8	21.4	0.1	0.0	11.5	0.0	0.0	165.7

Table F1-1: RGCP Channel Water Budget Equation Analysis Segment 1

2010-12 Study Period

(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	MODFLOW Floodplain Recharge	Open Water Channel Evaporation	MODFLOW Riparian Evapo- transpiration	Diversions Authorized (Percha, Arrey, & Leasburg)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
2/13/2011	168.6	1.2	0.0	0.0	1.0	51.7	13.9	20.3	0.1	0.0	11.5	0.0	0.0	176.8
2/14/2011	168.6	1.8	0.0	0.0	1.0	51.7	11.2	20.2	0.1	0.0	11.5	0.0	0.0	180.1
2/15/2011	160.3	0.7	0.0	0.0	1.0	51.7	11.3	20.2	0.1	0.0	11.5	0.0	0.0	170.6
2/16/2011	0.0	0.7	10.1	0.0	1.0	51.7	11.2	0.0	0.1	0.0	11.5	0.0	0.0	40.9
2/17/2011	0.0	2.9	8.0	0.0	1.0	51.7	9.1	0.0	0.1	0.0	11.5	0.0	0.0	43.0
2/18/2011	0.0	0.8	5.0	0.0	1.0	51.7	6.0	0.0	0.1	0.0	11.5	0.0	0.0	41.0
2/19/2011	0.0	1.0	5.2	0.0	1.0	51.7	6.2	0.0	0.1	0.0	11.5	0.0	0.0	41.1
2/20/2011	0.0	1.0	5.3	0.0	1.0	51.7	6.3	0.0	0.1	0.0	11.5	0.0	0.0	41.1
2/21/2011	0.0	2.9	5.2	0.0	1.0	51.7	6.2	0.0	0.1	0.0	11.5	0.0	0.0	43.0
2/22/2011	0.0	1.3	5.2	0.0	1.0	51.7	6.2	0.0	0.1	0.0	11.5	0.0	0.0	41.4
2/23/2011	0.0	3.7	5.1	0.0	1.0	51.7	6.2	0.0	0.1	0.0	11.5	0.0	0.0	43.8
2/24/2011	0.0	1.2	5.1	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	41.3
2/25/2011	0.0	2.8	5.2	0.0	1.0	51.7	6.2	0.0	0.1	0.0	11.5	0.0	0.0	42.9
2/26/2011	0.0	1.7	5.1	0.0	1.0	51.7	6.2	0.0	0.1	0.0	11.5	0.0	0.0	41.9
2/27/2011	0.0	0.8	5.2	0.0	1.0	51.7	6.2	0.0	0.1	0.0	11.5	0.0	0.0	40.9
2/28/2011	0.0	2.1	5.2	0.0	1.0	51.7	6.2	0.0	0.1	0.0	11.5	0.0	0.0	42.2
3/1/2011	0.0	1.7	5.2	0.0	1.0	28.8	6.2	0.0	6.3	6.2	33.7	0.0	0.0	-15.7
3/2/2011	0.0	0.9	5.2	0.0	1.0	28.8	6.2	0.0	6.3	6.2	33.7	0.0	0.0	-16.5
3/3/2011	0.0	0.9	5.0	0.0	1.0	28.8	6.1	0.0	6.3	6.2	33.7	0.0	0.0	-16.5
3/4/2011	0.0	1.9	5.2	0.0	1.0	28.8	6.3	0.0	6.3	6.2	33.7	0.0	0.0	-15.6
3/5/2011	0.0	0.3	5.1	0.0	1.0	28.8	6.1	0.0	6.3	6.2	33.7	0.0	0.0	-17.1
3/6/2011	0.0	1.1	5.1	0.0	1.0	28.8	6.2	0.0	6.3	6.2	33.7	0.0	0.0	-16.4
3/7/2011	23.7	1.0	0.0	0.0	1.0	28.8	6.2	17.7	6.3	6.2	33.7	0.0	0.0	-15.6
3/8/2011	23.6	1.1	0.0	0.0	1.0	28.8	6.1	17.7	6.3	6.2	33.7	0.0	0.0	-15.5
3/9/2011	23.8	0.6	0.0	0.0	1.0	28.8	6.2	17.8	6.3	6.2	33.7	0.0	0.0	-16.0
3/10/2011	24.0	1.1	0.0	0.0	1.0	28.8	6.1	18.0	6.3	6.2	33.7	0.0	0.0	-15.4
3/11/2011	601.5	1.2	0.0	0.0	1.0	28.8	492.1	24.9	6.3	6.2	33.7	0.0	0.0	69.4
3/12/2011	840.2	1.3	0.0	0.0	1.0	28.8	492.1	40.5	6.3	6.2	33.7	0.0	0.0	292.5
3/13/2011	842.0	0.6	0.0	0.0	1.0	28.8	720.3	50.4	6.3	6.2	33.7	0.0	0.0	55.6
3/14/2011	843.4	0.8	0.0	0.0	1.0	28.8	792.5	50.8	6.3	6.2	33.7	0.0	0.0	-15.5
3/15/2011	1198.3	0.7	0.0	0.0	1.0	28.8	793.7	56.0	6.3	6.2	33.7	0.0	0.0	332.8
3/16/2011	1692.7	0.4	0.0	0.0	1.0	28.8	1073.1	69.8	6.3	6.2	33.7	0.0	0.0	533.7
3/17/2011	1817.0	0.6	0.0	0.0	1.0	28.8	1590.1	79.0	6.3	6.2	33.7	0.0	0.0	132.1
3/18/2011	2332.8	1.2	0.0	0.0	1.0	28.8	1752.7	88.0	6.3	6.2	33.7	0.0	0.0	476.9
3/19/2011	2560.2	0.8	0.0	0.0	1.0	28.8	2242.1	97.2	6.3	6.2	33.7	0.0	0.0	205.3
3/20/2011	2546.6	1.2	0.0	0.0	1.0	28.8	2439.7	99.3	6.3	6.2	33.7	0.0	0.0	-7.7
3/21/2011	2706.2	0.7	0.0	0.0	1.0	28.8	2450.1	101.4	6.3	6.2	33.7	0.0	0.0	139.0
3/22/2011	2926.4	2.1	0.0	0.0	1.0	28.8	2614.9	106.0	6.3	6.2	33.7	0.0	0.0	191.2
3/23/2011	2975.3	0.5	0.0	0.0	1.0	28.8	2805.0	108.8	6.3	6.2	33.7	0.0	0.0	45.6
3/24/2011	2978.2	0.2	0.0	0.0	1.0	28.8	2847.4	109.3	6.3	6.2	33.7	0.0	0.0	5.4
3/25/2011	3008.7	0.8	0.0	0.0	1.0	28.8	2854.2	109.7	6.3	6.2	33.7	0.0	0.0	29.1
3/26/2011	3014.9	2.2	0.0	0.0	1.0	28.8	2506.8	68.9	6.3	6.2	33.7	0.0	0.0	425.1
3/27/2011	3054.5	1.4	0.0	0.0	1.0	28.8	816.9	26.5	6.3	6.2	33.7	0.0	0.0	2196.1
3/28/2011	3094.2	0.1	0.0	0.0	1.0	28.8	505.1	18.2	6.3	6.2	33.7	0.0	0.0	2554.6
3/29/2011	3133.9	0.8	0.0	0.0	1.0	28.8	492.1	18.2	6.3	6.2	33.7	0.0	0.0	2608.1
3/30/2011	3160.7	0.3	0.0	0.0	1.0	28.8	492.2	61.8	6.3	6.2	33.7	0.0	0.0	2590.7
3/31/2011	2765.4	0.1	183.2	0.0	1.0	28.8	2949.6	108.3	6.3	6.2	33.7	0.0	0.0	-125.7
4/1/2011	2158.1	0.1	404.5	0.0	1.0	28.8	2563.6	96.1	6.3	13.7	33.7	0.0	0.0	-121.0
4/2/2011	1919.3	0.7	122.3	0.0	1.0	28.8	2042.6	86.3	6.3	13.7	33.7	0.0	0.0	-110.5
4/3/2011	1931.9	0.6	0.0	0.0	1.0	28.8	1827.9	83.7	6.3	13.7	33.7	0.0	0.0	-3.0
4/4/2011	2105.2	0.8	0.0	0.0	1.0	28.8	1846.7	86.3	6.3	13.7	33.7	0.0	0.0	149.2

Table F1-1: RGCP Channel Water Budget Equation Analysis Segment 1

2010-12 Study Period

(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	MODFLOW Floodplain Recharge	Open Water Channel Evaporation	MODFLOW Riparian Evapo- transpiration	Diversions Authorized (Percha, Arrey, & Leasburg)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
4/5/2011	2319.7	1.2	0.0	0.0	1.0	28.8	2016.5	91.4	6.3	13.7	33.7	0.0	0.0	189.2
4/6/2011	2414.8	0.7	0.0	0.0	1.0	28.8	2217.2	95.2	6.3	13.7	33.7	0.0	0.0	79.1
4/7/2011	2152.0	1.3	117.6	0.0	1.0	28.8	2270.6	92.6	6.3	13.7	33.7	0.0	0.0	-116.1
4/8/2011	1981.2	0.6	55.0	0.0	1.0	28.8	2037.2	87.3	6.3	13.7	33.7	0.0	0.0	-111.6
4/9/2011	1770.2	0.1	97.3	0.0	1.0	28.8	1868.5	82.3	6.3	13.7	33.7	0.0	0.0	-107.2
4/10/2011	1659.5	0.2	16.4	0.0	1.0	28.8	1676.9	78.1	6.3	13.7	33.7	0.0	0.0	-102.9
4/11/2011	1665.1	1.3	0.0	0.0	1.0	28.8	1574.3	76.8	6.3	13.7	33.7	0.0	0.0	-8.6
4/12/2011	1534.6	1.7	33.5	0.0	1.0	28.8	1569.1	75.0	6.3	13.7	33.7	0.0	0.0	-98.1
4/13/2011	1435.0	0.1	17.7	0.0	1.0	28.8	1453.7	71.7	6.3	13.7	33.7	0.0	0.0	-96.5
4/14/2011	1442.7	0.3	0.0	0.0	1.0	28.8	1360.0	70.4	6.3	13.7	33.7	0.0	0.0	-11.3
4/15/2011	1445.5	1.0	0.0	0.0	1.0	28.8	1360.1	70.5	6.3	13.7	33.7	0.0	0.0	-8.0
4/16/2011	1671.9	0.4	0.0	0.0	1.0	28.8	1368.4	73.9	6.3	13.7	33.7	0.0	0.0	206.2
4/17/2011	1992.8	2.6	0.0	0.0	1.0	28.8	1589.3	81.6	6.3	13.7	33.7	0.0	0.0	300.7
4/18/2011	2076.4	0.3	0.0	0.0	1.0	28.8	1893.5	86.7	6.3	13.7	33.7	0.0	0.0	72.6
4/19/2011	2153.1	0.3	0.0	0.0	1.0	28.8	1978.6	88.9	6.3	13.7	33.7	0.0	0.0	62.0
4/20/2011	2068.6	0.9	0.0	0.0	1.0	28.8	2039.4	88.6	6.3	13.7	33.7	0.0	0.0	-82.4
4/21/2011	1834.1	0.1	113.5	0.0	1.0	28.8	1948.7	84.4	6.3	13.7	33.7	0.0	0.0	-109.2
4/22/2011	1561.7	0.3	165.4	0.0	1.0	28.8	1728.1	77.7	6.3	13.7	33.7	0.0	0.0	-102.3
4/23/2011	1575.3	2.6	0.0	0.0	1.0	28.8	1490.0	74.3	6.3	13.7	33.7	0.0	0.0	-10.3
4/24/2011	1731.7	1.0	0.0	0.0	1.0	28.8	1493.2	76.7	6.3	13.7	33.7	0.0	0.0	138.9
4/25/2011	1736.7	0.2	0.0	0.0	1.0	28.8	1634.7	78.8	6.3	13.7	33.7	0.0	0.0	-0.5
4/26/2011	2012.2	1.9	0.0	0.0	1.0	28.8	1659.5	82.8	6.3	13.7	33.7	0.0	0.0	247.9
4/27/2011	1655.3	1.5	222.1	0.0	1.0	28.8	1878.4	81.1	6.3	13.7	33.7	0.0	0.0	-104.5
4/28/2011	1545.9	0.8	26.8	0.0	1.0	28.8	1573.7	75.1	6.3	13.7	33.7	0.0	0.0	-99.2
4/29/2011	1229.2	1.2	226.5	0.0	1.0	28.8	1456.7	69.1	6.3	13.7	33.7	0.0	0.0	-92.8
4/30/2011	1012.3	1.5	176.2	0.0	1.0	28.8	1189.6	61.1	6.3	13.7	33.7	0.0	0.0	-84.6
5/1/2011	932.7	0.4	52.0	0.0	1.0	28.8	985.8	56.1	6.3	21.5	33.7	0.0	0.0	-88.4
5/2/2011	897.3	1.2	0.0	0.0	1.0	28.8	886.0	54.0	6.3	21.5	33.7	0.0	0.0	-73.2
5/3/2011	795.8	2.5	46.9	0.0	1.0	28.8	843.7	51.9	6.3	21.5	33.7	0.0	0.0	-82.1
5/4/2011	755.9	1.4	24.6	0.0	1.0	28.8	781.5	49.3	6.3	21.5	33.7	0.0	0.0	-80.6
5/5/2011	795.8	1.0	0.0	0.0	1.0	28.8	742.7	48.8	6.3	21.5	33.7	0.0	0.0	-26.4
5/6/2011	804.7	0.8	0.0	0.0	1.0	28.8	746.4	49.8	6.3	21.5	33.7	0.0	0.0	-22.4
5/7/2011	1002.0	1.6	0.0	0.0	1.0	28.8	762.7	52.9	6.3	21.5	33.7	0.0	0.0	156.3
5/8/2011	1414.2	0.3	0.0	0.0	1.0	28.8	895.6	62.8	6.3	21.5	33.7	0.0	0.0	424.5
5/9/2011	1411.9	0.9	0.0	0.0	1.0	28.8	1293.8	69.8	6.3	21.5	33.7	0.0	0.0	17.4
5/10/2011	1587.6	0.3	0.0	0.0	1.0	28.8	1334.5	72.4	6.3	21.5	33.7	0.0	0.0	149.4
5/11/2011	1692.4	1.1	0.0	0.0	1.0	28.8	1494.7	76.4	6.3	21.5	33.7	0.0	0.0	90.6
5/12/2011	1527.0	0.4	61.8	0.0	1.0	28.8	1589.8	75.4	6.3	21.5	33.7	0.0	0.0	-107.8
5/13/2011	1409.1	0.7	37.7	0.0	1.0	28.8	1447.8	71.5	6.3	21.5	33.7	0.0	0.0	-103.5
5/14/2011	1407.4	1.4	0.0	0.0	1.0	28.8	1336.6	69.7	6.3	21.5	33.7	0.0	0.0	-29.2
5/15/2011	1406.2	0.6	0.0	0.0	1.0	28.8	1326.4	69.7	6.3	21.5	33.7	0.0	0.0	-21.0
5/16/2011	1529.2	1.6	0.0	0.0	1.0	28.8	1327.7	71.5	6.3	21.5	33.7	0.0	0.0	100.0
5/17/2011	1742.3	1.8	0.0	0.0	1.0	28.8	1442.6	76.4	6.3	21.5	33.7	0.0	0.0	193.4
5/18/2011	1856.6	2.6	0.0	0.0	1.0	28.8	1648.8	80.8	6.3	21.5	33.7	0.0	0.0	97.9
5/19/2011	1691.8	0.7	54.2	0.0	1.0	28.8	1747.1	80.0	6.3	21.5	33.7	0.0	0.0	-111.9
5/20/2011	1574.8	1.1	25.0	0.0	1.0	28.8	1600.8	76.2	6.3	21.5	33.7	0.0	0.0	-107.8
5/21/2011	1331.1	0.5	153.8	0.0	1.0	28.8	1486.0	71.1	6.3	21.5	33.7	0.0	0.0	-103.3
5/22/2011	1197.7	1.5	75.9	0.0	1.0	28.8	1274.6	65.6	6.3	21.5	33.7	0.0	0.0	-96.8
5/23/2011	1196.3	1.7	0.0	0.0	1.0	28.8	1141.2	63.3	6.3	21.5	33.7	0.0	0.0	-38.2
5/24/2011	1142.0	1.6	0.0	0.0	1.0	28.8	1122.5	62.5	6.3	21.5	33.7	0.0	0.0	-73.0
5/25/2011	1078.3	2.1	0.0	0.0	1.0	28.8	1078.3	60.7	6.3	21.5	33.7	0.0	0.0	-90.2

Table F1-1: RGCP Channel Water Budget Equation Analysis Segment 1

2010-12 Study Period

(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	MODFLOW Floodplain Recharge	Open Water Channel Evaporation	MODFLOW Riparian Evapo- transpiration	Diversions Authorized (Percha, Arrey, & Leasburg)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
5/26/2011	1078.1	0.5	0.0	0.0	1.0	28.8	1020.1	59.5	6.3	21.5	33.7	0.0	0.0	-32.7
5/27/2011	1186.6	3.0	0.0	0.0	1.0	28.8	1009.3	61.1	6.3	21.5	33.7	0.0	0.0	87.5
5/28/2011	1408.3	1.8	0.0	0.0	1.0	28.8	1099.8	66.1	6.3	21.5	33.7	0.0	0.0	212.5
5/29/2011	1609.9	0.8	0.0	0.0	1.0	28.8	1311.5	72.7	6.3	21.5	33.7	0.0	0.0	194.9
5/30/2011	1760.3	1.1	0.0	0.0	1.0	28.8	1516.6	77.8	6.3	21.5	33.7	0.0	0.0	135.3
5/31/2011	2749.5	0.8	0.0	0.0	1.0	28.8	1724.8	93.8	6.3	21.5	33.7	0.0	0.0	900.0
6/1/2011	3291.1	1.3	0.0	0.0	1.0	28.8	2492.3	108.3	6.3	22.1	33.7	434.4	4.3	220.7
6/2/2011	3141.9	1.3	0.0	0.0	1.0	28.8	2572.9	109.1	6.3	22.1	33.7	567.3	5.7	-144.0
6/3/2011	3123.3	2.4	0.0	0.0	1.0	28.8	2454.0	107.4	6.3	22.1	33.7	561.3	5.6	-35.0
6/4/2011	3211.9	2.1	0.0	0.0	1.0	28.8	2447.6	108.4	6.3	22.1	33.7	567.3	5.7	52.7
6/5/2011	3209.1	0.1	0.0	0.0	1.0	28.8	2517.4	109.2	6.3	22.1	33.7	565.3	5.7	-20.7
6/6/2011	3201.1	0.8	0.0	0.0	1.0	28.8	2500.0	107.6	6.3	22.1	33.7	674.4	6.7	-119.0
6/7/2011	3346.9	3.7	0.0	0.0	1.0	28.8	2420.8	107.5	6.3	22.1	33.7	739.8	7.4	42.8
6/8/2011	3513.2	0.6	0.0	0.0	1.0	28.8	2512.7	111.1	6.3	22.1	33.7	692.2	6.9	158.5
6/9/2011	3385.5	0.9	0.0	0.0	1.0	28.8	2627.1	111.8	6.3	22.1	33.7	706.1	7.1	-98.0
6/10/2011	3300.7	0.7	0.0	0.0	1.0	28.8	2516.4	110.4	6.3	22.1	33.7	694.2	6.9	-58.9
6/11/2011	3368.3	2.2	0.0	0.0	1.0	28.8	2491.0	111.5	6.3	22.1	33.7	656.5	6.6	72.6
6/12/2011	3364.9	1.6	0.0	0.0	1.0	28.8	2584.3	112.6	6.3	22.1	33.7	642.6	6.4	-11.9
6/13/2011	3514.2	0.8	0.0	0.0	1.0	28.8	2616.6	114.1	6.3	22.1	33.7	680.3	6.8	65.0
6/14/2011	3617.5	1.0	0.0	0.0	1.0	28.8	2686.1	115.1	6.3	22.1	33.7	793.4	7.9	-16.3
6/15/2011	3611.6	0.6	0.0	0.0	1.0	28.8	2681.4	114.8	6.3	22.1	33.7	815.2	8.2	-39.8
6/16/2011	3499.4	1.6	0.0	0.0	1.0	28.8	2666.5	113.2	6.3	22.1	33.7	789.4	7.9	-108.4
6/17/2011	3247.9	2.4	74.5	0.0	1.0	28.8	2540.0	109.0	6.3	22.1	33.7	783.5	7.8	-147.8
6/18/2011	3128.5	5.0	0.0	0.0	1.0	28.8	2326.9	105.9	6.3	22.1	33.7	726.0	7.3	-64.8
6/19/2011	3126.1	0.8	0.0	0.0	1.0	28.8	2285.6	105.8	6.3	22.1	33.7	694.2	6.9	2.1
6/20/2011	3478.0	4.4	0.0	0.0	1.0	28.8	2350.5	110.2	6.3	22.1	33.7	743.8	7.4	238.2
6/21/2011	3656.5	1.7	0.0	0.0	1.0	28.8	2629.9	115.0	6.3	22.1	33.7	771.6	7.7	101.7
6/22/2011	3801.1	2.8	0.0	0.0	1.0	28.8	2771.1	118.5	6.3	22.1	33.7	767.6	7.7	106.7
6/23/2011	3815.2	3.3	0.0	0.0	1.0	28.8	2830.4	120.1	6.3	22.1	33.7	829.1	8.3	-1.6
6/24/2011	3695.3	3.0	0.0	0.0	1.0	28.8	2777.8	119.7	6.3	22.1	33.7	819.2	8.2	-58.8
6/25/2011	3692.0	1.9	0.0	0.0	1.0	28.8	2741.3	119.4	6.3	22.1	33.7	801.3	8.0	-8.5
6/26/2011	3688.3	3.1	0.0	0.0	1.0	28.8	2797.3	120.0	6.3	22.1	33.7	726.0	7.3	8.6
6/27/2011	3683.9	3.9	0.0	0.0	1.0	28.8	2847.1	119.5	6.3	22.1	33.7	739.8	7.4	-58.4
6/28/2011	3760.6	3.7	0.0	0.0	1.0	28.8	2819.0	119.5	6.3	22.1	33.7	773.6	7.7	12.1
6/29/2011	4055.0	8.5	0.0	0.0	1.0	28.8	2888.5	123.1	6.3	22.1	33.7	829.1	8.3	182.3
6/30/2011	4226.5	3.1	0.0	0.0	1.0	28.8	3036.4	126.0	6.3	22.1	33.7	991.7	9.9	33.2
7/1/2011	4215.4	5.6	0.0	0.0	1.0	28.8	3072.9	126.5	6.3	16.4	33.7	995.7	10.0	-10.7
7/2/2011	4205.2	6.7	0.0	0.0	1.0	28.8	3062.6	126.3	6.3	16.4	33.7	1009.6	10.1	-23.3
7/3/2011	4196.7	4.3	0.0	0.0	1.0	28.8	3035.4	126.0	6.3	16.4	33.7	1027.4	10.3	-24.8
7/4/2011	3857.8	4.8	21.5	0.0	1.0	28.8	2985.8	123.2	6.3	16.4	33.7	894.5	8.9	-155.0
7/5/2011	3529.1	9.3	0.0	0.0	1.0	28.8	2875.6	119.6	6.3	16.4	33.7	624.8	6.2	-114.5
7/6/2011	2690.5	5.1	425.7	0.0	1.0	28.8	2694.7	109.4	6.3	16.4	33.7	422.5	4.2	-136.1
7/7/2011	2070.1	7.8	413.3	0.0	1.0	28.8	2369.4	94.5	6.3	16.4	33.7	115.0	1.2	-115.5
7/8/2011	1950.9	6.5	12.5	0.0	1.0	28.8	1964.4	86.1	6.3	16.4	33.7	0.0	0.0	-107.3
7/9/2011	1821.3	5.8	22.2	0.0	1.0	28.8	1844.5	82.9	6.3	16.4	33.7	0.0	0.0	-104.8
7/10/2011	1828.2	4.6	0.0	0.0	1.0	28.8	1730.3	81.4	6.3	16.4	33.7	0.0	0.0	-5.6
7/11/2011	1835.1	4.9	0.0	0.0	1.0	28.8	1733.3	81.6	6.3	16.4	33.7	0.0	0.0	-1.4
7/12/2011	1841.0	5.3	0.0	0.0	1.0	28.8	1739.8	81.8	6.3	16.4	33.7	0.0	0.0	-2.0
7/13/2011	1848.7	6.7	0.0	0.0	1.0	28.8	1745.7	82.0	6.3	16.4	33.7	0.0	0.0	1.1
7/14/2011	1686.4	4.4	54.8	0.0	1.0	28.8	1742.2	79.7	6.3	16.4	33.7	0.0	0.0	-103.0
7/15/2011	1692.1	13.7	0.0	0.0	1.0	28.8	1601.6	77.8	6.3	16.4	33.7	0.0	0.0	-0.1



Table F1-1: RGCP Channel Water Budget Equation Analysis Segment 1

2010-12 Study Period

(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	MODFLOW Floodplain Recharge	Open Water Channel Evaporation	MODFLOW Riparian Evapo- transpiration	Diversions Authorized (Percha, Arrey, & Leasburg)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
7/16/2011	1824.8	3.4	0.0	0.0	1.0	28.8	1608.0	79.8	6.3	16.4	33.7	0.0	0.0	113.8
7/17/2011	1823.7	3.8	0.0	0.0	1.0	28.8	1726.1	81.4	6.3	16.4	33.7	0.0	0.0	-6.7
7/18/2011	1984.7	6.5	0.0	0.0	1.0	28.8	1738.9	83.7	6.3	16.4	33.7	0.0	0.0	142.0
7/19/2011	2208.4	6.3	0.0	0.0	1.0	28.8	1899.5	88.8	6.3	16.4	33.7	0.0	0.0	199.8
7/20/2011	2203.0	7.0	0.0	0.0	1.0	28.8	2097.3	91.3	6.3	16.4	33.7	0.0	0.0	-5.3
7/21/2011	2066.7	8.3	16.8	0.0	1.0	28.8	2084.5	89.3	6.3	16.4	33.7	0.0	0.0	-108.6
7/22/2011	1963.0	7.8	0.0	0.0	1.0	28.8	1958.3	86.3	6.3	16.4	33.7	0.0	0.0	-100.4
7/23/2011	2015.4	6.4	0.0	0.0	1.0	28.8	1869.9	85.8	6.3	16.4	33.7	0.0	0.0	39.5
7/24/2011	2012.1	7.6	0.0	0.0	1.0	28.8	1913.2	86.4	6.3	16.4	33.7	0.0	0.0	-6.4
7/25/2011	2007.5	6.2	0.0	0.0	1.0	28.8	1910.9	86.3	6.3	16.4	33.7	0.0	0.0	-10.2
7/26/2011	2078.5	6.5	0.0	0.0	1.0	28.8	1912.6	87.2	6.3	16.4	33.7	0.0	0.0	58.6
7/27/2011	2135.8	5.7	0.0	0.0	1.0	28.8	1978.9	88.9	6.3	16.4	33.7	0.0	0.0	47.1
7/28/2011	1667.0	6.0	323.9	0.0	1.0	28.8	1992.0	82.9	6.3	16.4	33.7	0.0	0.0	-104.6
7/29/2011	1791.6	7.6	0.0	0.0	1.0	28.8	1599.5	78.9	6.3	16.4	33.7	0.0	0.0	94.2
7/30/2011	1835.5	8.7	0.0	0.0	1.0	28.8	1696.7	81.2	6.3	16.4	33.7	0.0	0.0	39.8
7/31/2011	1821.5	6.7	0.0	0.0	1.0	28.8	1738.0	81.5	6.3	16.4	33.7	0.0	0.0	-17.9
8/1/2011	1936.9	7.2	0.0	0.0	1.0	28.8	1734.2	83.0	6.3	15.5	33.7	0.0	0.0	101.2
8/2/2011	1881.9	8.7	0.0	0.0	1.0	28.8	1831.7	83.6	6.3	15.5	33.7	0.0	0.0	-50.3
8/3/2011	1721.3	8.8	53.1	0.0	1.0	28.8	1775.4	80.7	6.3	15.5	33.7	0.0	0.0	-98.6
8/4/2011	1705.2	6.8	0.0	0.0	1.0	28.8	1634.1	78.4	6.3	15.5	33.7	0.0	0.0	-26.2
8/5/2011	1746.1	6.6	0.0	0.0	1.0	28.8	1616.7	78.8	6.3	15.5	33.7	0.0	0.0	31.5
8/6/2011	1815.9	5.4	0.0	0.0	1.0	28.8	1656.0	80.4	6.3	15.5	33.7	0.0	0.0	59.3
8/7/2011	1795.3	6.8	0.0	0.0	1.0	28.8	1718.0	80.9	6.3	15.5	33.7	0.0	0.0	-22.5
8/8/2011	1774.7	5.6	0.0	0.0	1.0	28.8	1700.2	80.4	6.3	15.5	33.7	0.0	0.0	-26.0
8/9/2011	1753.1	7.8	0.0	0.0	1.0	28.8	1680.5	79.8	6.3	15.5	33.7	0.0	0.0	-25.0
8/10/2011	1789.3	7.3	0.0	0.0	1.0	28.8	1663.0	80.1	6.3	15.5	33.7	0.0	0.0	27.9
8/11/2011	1845.0	8.8	0.0	0.0	1.0	28.8	1697.7	81.3	6.3	15.5	33.7	0.0	0.0	49.1
8/12/2011	1875.9	8.6	0.0	0.0	1.0	28.8	1749.8	82.4	6.3	15.5	33.7	0.0	0.0	26.7
8/13/2011	1907.8	10.2	0.0	0.0	1.0	28.8	1780.7	83.3	6.3	15.5	33.7	0.0	0.0	28.4
8/14/2011	1889.6	7.5	0.0	0.0	1.0	28.8	1808.0	83.4	6.3	15.5	33.7	0.0	0.0	-19.9
8/15/2011	1872.6	7.5	0.0	0.0	1.0	28.8	1791.7	82.9	6.3	15.5	33.7	0.0	0.0	-20.1
8/16/2011	1888.5	9.4	0.0	0.0	1.0	28.8	1777.7	82.9	6.3	15.5	33.7	0.0	0.0	11.7
8/17/2011	1919.0	3.3	0.0	0.0	1.0	28.8	1793.1	83.6	6.3	15.5	33.7	0.0	0.0	20.0
8/18/2011	1911.1	8.4	0.0	0.0	1.0	28.8	1819.6	83.8	6.3	15.5	33.7	0.0	0.0	-9.6
8/19/2011	1905.4	6.0	0.0	0.0	1.0	28.8	1813.0	83.7	6.3	15.5	33.7	0.0	0.0	-10.9
8/20/2011	1898.8	7.0	0.0	0.0	1.0	28.8	1807.4	83.5	6.3	15.5	33.7	0.0	0.0	-10.8
8/21/2011	1890.9	11.8	0.0	0.0	1.0	28.8	1801.0	83.3	6.3	15.5	33.7	0.0	0.0	-7.2
8/22/2011	1883.6	5.7	0.0	0.0	1.0	28.8	1793.5	83.1	6.3	15.5	33.7	0.0	0.0	-12.9
8/23/2011	1895.6	15.0	0.0	0.0	1.0	28.8	1787.7	83.2	6.3	15.5	33.7	0.0	0.0	14.1
8/24/2011	2028.1	10.0	0.0	0.0	1.0	28.8	1807.1	85.2	6.3	15.5	33.7	0.0	0.0	120.1
8/25/2011	2089.0	5.1	0.0	0.0	1.0	28.8	1929.3	87.6	6.3	15.5	33.7	0.0	0.0	51.4
8/26/2011	1985.3	5.5	0.0	0.0	1.0	28.8	1975.8	86.9	6.3	15.5	33.7	0.0	0.0	-97.6
8/27/2011	1893.5	4.6	0.0	0.0	1.0	28.8	1880.0	84.4	6.3	15.5	33.7	0.0	0.0	-91.8
8/28/2011	1884.6	2.1	0.0	0.0	1.0	28.8	1797.7	83.2	6.3	15.5	33.7	0.0	0.0	-19.8
8/29/2011	1875.6	6.6	0.0	0.0	1.0	28.8	1787.2	82.9	6.3	15.5	33.7	0.0	0.0	-13.6
8/30/2011	1584.5	7.3	174.4	0.0	1.0	28.8	1759.9	78.6	6.3	15.5	33.7	0.0	0.0	-98.0
8/31/2011	1396.4	5.1	108.2	0.0	1.0	28.8	1505.6	72.2	6.3	15.5	33.7	0.0	0.0	-93.7
9/1/2011	1727.7	5.2	0.0	0.0	1.0	28.8	1336.5	74.3	6.3	12.4	33.7	0.0	0.0	299.5
9/2/2011	1922.8	5.6	0.0	0.0	1.0	28.8	1634.7	81.6	6.3	12.4	33.7	0.0	0.0	189.5
9/3/2011	1933.2	3.9	0.0	0.0	1.0	28.8	1820.8	84.2	6.3	12.4	33.7	0.0	0.0	9.5
9/4/2011	1938.4	4.4	0.0	0.0	1.0	28.8	1834.9	84.4	6.3	12.4	33.7	0.0	0.0	0.8



Table F1-1: RGCP Channel Water Budget Equation Analysis Segment 1

2010-12 Study Period

(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	MODFLOW Floodplain Recharge	Open Water Channel Evaporation	MODFLOW Riparian Evapo- transpiration	Diversions Authorized (Percha, Arrey, & Leasburg)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
9/5/2011	1954.5	8.2	0.0	0.0	1.0	28.8	1840.8	84.7	6.3	12.4	33.7	0.0	0.0	14.5
9/6/2011	1970.1	4.6	0.0	0.0	1.0	28.8	1856.3	85.1	6.3	12.4	33.7	0.0	0.0	10.7
9/7/2011	1983.7	5.9	0.0	0.0	1.0	28.8	1871.3	85.4	6.3	12.4	33.7	0.0	0.0	10.3
9/8/2011	1993.1	2.8	0.0	0.0	1.0	28.8	1884.2	85.8	6.3	12.4	33.7	0.0	0.0	3.2
9/9/2011	1969.0	4.3	0.0	0.0	1.0	28.8	1890.6	85.5	6.3	12.4	33.7	0.0	0.0	-25.5
9/10/2011	804.4	5.2	985.7	0.0	1.0	28.8	1791.2	68.6	6.3	12.4	33.7	0.0	0.0	-87.1
9/11/2011	0.0	4.7	962.6	0.0	1.0	28.8	963.6	39.9	6.3	12.4	33.7	0.0	0.0	-58.9
9/12/2011	0.0	11.0	587.4	0.0	1.0	28.8	588.5	22.9	6.3	12.4	33.7	0.0	0.0	-35.6
9/13/2011	0.0	9.0	9.4	0.0	1.0	28.8	10.4	0.0	6.3	12.4	33.7	0.0	0.0	-14.7
9/14/2011	0.0	7.0	5.1	0.0	1.0	28.8	6.1	0.0	6.3	12.4	33.7	0.0	0.0	-16.7
9/15/2011	0.0	7.5	5.1	0.0	1.0	28.8	6.1	0.0	6.3	12.4	33.7	0.0	0.0	-16.1
9/16/2011	0.0	2.9	5.0	0.0	1.0	28.8	6.0	0.0	6.3	12.4	33.7	0.0	0.0	-20.8
9/17/2011	0.0	3.5	5.1	0.0	1.0	28.8	6.1	0.0	6.3	12.4	33.7	0.0	0.0	-20.2
9/18/2011	0.0	3.1	5.0	0.0	1.0	28.8	6.0	0.0	6.3	12.4	33.7	0.0	0.0	-20.6
9/19/2011	0.0	7.0	5.1	0.0	1.0	28.8	6.1	0.0	6.3	12.4	33.7	0.0	0.0	-16.6
9/20/2011	0.0	1.7	5.1	0.0	1.0	28.8	6.1	0.0	6.3	12.4	33.7	0.0	0.0	-21.9
9/21/2011	0.0	5.5	5.0	0.0	1.0	28.8	6.1	0.0	6.3	12.4	33.7	0.0	0.0	-18.1
9/22/2011	0.0	5.8	5.0	0.0	1.0	28.8	6.0	0.0	6.3	12.4	33.7	0.0	0.0	-17.8
9/23/2011	0.0	7.3	5.1	0.0	1.0	28.8	6.1	0.0	6.3	12.4	33.7	0.0	0.0	-16.4
9/24/2011	0.0	8.0	5.0	0.0	1.0	28.8	6.1	0.0	6.3	12.4	33.7	0.0	0.0	-15.6
9/25/2011	0.0	9.7	5.1	0.0	1.0	28.8	6.1	0.0	6.3	12.4	33.7	0.0	0.0	-14.0
9/26/2011	0.0	4.9	5.1	0.0	1.0	28.8	6.1	0.0	6.3	12.4	33.7	0.0	0.0	-18.8
9/27/2011	0.0	2.9	5.1	0.0	1.0	28.8	6.1	0.0	6.3	12.4	33.7	0.0	0.0	-20.8
9/28/2011	0.0	2.5	5.0	0.0	1.0	28.8	6.1	0.0	6.3	12.4	33.7	0.0	0.0	-21.2
9/29/2011	0.0	6.7	5.0	0.0	1.0	28.8	6.0	0.0	6.3	12.4	33.7	0.0	0.0	-16.9
9/30/2011	0.0	3.8	5.0	0.0	1.0	28.8	6.0	0.0	6.3	12.4	33.7	0.0	0.0	-19.9
10/1/2011	0.0	2.3	5.0	0.0	1.0	28.8	6.1	0.0	6.3	0.0	33.7	0.0	0.0	-8.9
10/2/2011	0.0	3.8	5.0	0.0	1.0	28.8	6.0	0.0	6.3	0.0	33.7	0.0	0.0	-7.4
10/3/2011	0.0	2.9	5.0	0.0	1.0	28.8	6.0	0.0	6.3	0.0	33.7	0.0	0.0	-8.3
10/4/2011	0.0	3.7	5.0	0.0	1.0	28.8	6.1	0.0	6.3	0.0	33.7	0.0	0.0	-7.6
10/5/2011	0.0	4.2	5.0	0.0	1.0	28.8	6.0	0.0	6.3	0.0	33.7	0.0	0.0	-7.0
10/6/2011	0.0	3.2	5.0	0.0	1.0	28.8	6.0	0.0	6.3	0.0	33.7	0.0	0.0	-8.0
10/7/2011	0.0	5.1	5.1	0.0	1.0	28.8	6.1	0.0	6.3	0.0	33.7	0.0	0.0	-6.1
10/8/2011	0.0	2.0	5.0	0.0	1.0	28.8	6.1	0.0	6.3	0.0	33.7	0.0	0.0	-9.2
10/9/2011	0.0	3.4	5.0	0.0	1.0	28.8	6.0	0.0	6.3	0.0	33.7	0.0	0.0	-7.8
10/10/2011	0.0	2.9	5.0	0.0	1.0	28.8	6.1	0.0	6.3	0.0	33.7	0.0	0.0	-8.3
10/11/2011	0.0	5.8	5.0	0.0	1.0	28.8	6.0	0.0	6.3	0.0	33.7	0.0	0.0	-5.4
10/12/2011	0.0	5.2	5.1	0.0	1.0	28.8	6.1	0.0	6.3	0.0	33.7	0.0	0.0	-6.0
10/13/2011	0.0	2.8	5.0	0.0	1.0	28.8	6.0	0.0	6.3	0.0	33.7	0.0	0.0	-8.5
10/14/2011	0.0	3.9	5.0	0.0	1.0	28.8	6.0	0.0	6.3	0.0	33.7	0.0	0.0	-7.3
10/15/2011	0.0	2.8	5.1	0.0	1.0	28.8	6.1	0.0	6.3	0.0	33.7	0.0	0.0	-8.5
10/16/2011	0.0	4.1	5.1	0.0	1.0	28.8	6.1	0.0	6.3	0.0	33.7	0.0	0.0	-7.1
10/17/2011	0.0	1.6	5.1	0.0	1.0	28.8	6.1	0.0	6.3	0.0	33.7	0.0	0.0	-9.6
10/18/2011	0.0	1.9	5.0	0.0	1.0	28.8	6.0	0.0	6.3	0.0	33.7	0.0	0.0	-9.3
10/19/2011	0.0	5.2	5.1	0.0	1.0	28.8	6.1	0.0	6.3	0.0	33.7	0.0	0.0	-6.0
10/20/2011	0.0	2.3	5.0	0.0	1.0	28.8	6.0	0.0	6.3	0.0	33.7	0.0	0.0	-8.9
10/21/2011	0.0	3.0	5.1	0.0	1.0	28.8	6.1	0.0	6.3	0.0	33.7	0.0	0.0	-8.2
10/22/2011	0.0	4.2	5.0	0.0	1.0	28.8	6.0	0.0	6.3	0.0	33.7	0.0	0.0	-7.0
10/23/2011	0.0	6.2	5.1	0.0	1.0	28.8	6.1	0.0	6.3	0.0	33.7	0.0	0.0	-5.0
10/24/2011	0.0	2.6	5.0	0.0	1.0	28.8	6.1	0.0	6.3	0.0	33.7	0.0	0.0	-8.6
10/25/2011	0.0	2.5	5.0	0.0	1.0	28.8	6.0	0.0	6.3	0.0	33.7	0.0	0.0	-8.7

Table F1-1: RGCP Channel Water Budget Equation Analysis Segment 1

2010-12 Study Period

(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	MODFLOW Floodplain Recharge	Open Water Channel Evaporation	MODFLOW Riparian Evapo- transpiration	Diversions Authorized (Percha, Arrey, & Leasburg)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
10/26/2011	0.0	2.5	5.0	0.0	1.0	28.8	6.0	0.0	6.3	0.0	33.7	0.0	0.0	-8.7
10/27/2011	0.0	5.0	5.1	0.0	1.0	28.8	6.1	0.0	6.3	0.0	33.7	0.0	0.0	-6.2
10/28/2011	0.0	3.7	5.1	0.0	1.0	28.8	6.1	0.0	6.3	0.0	33.7	0.0	0.0	-7.5
10/29/2011	0.0	1.5	5.0	0.0	1.0	28.8	6.0	0.0	6.3	0.0	33.7	0.0	0.0	-9.7
10/30/2011	0.0	2.8	5.0	0.0	1.0	28.8	6.0	0.0	6.3	0.0	33.7	0.0	0.0	-8.5
10/31/2011	0.0	4.4	5.0	0.0	1.0	28.8	6.1	0.0	6.3	0.0	33.7	0.0	0.0	-6.8
11/1/2011	0.0	2.5	5.0	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	42.6
11/2/2011	0.0	2.4	5.0	0.0	1.0	51.7	6.0	0.0	0.1	0.0	11.5	0.0	0.0	42.6
11/3/2011	0.0	3.1	5.0	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	43.2
11/4/2011	0.0	2.2	5.1	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	42.3
11/5/2011	0.0	0.8	5.0	0.0	1.0	51.7	6.0	0.0	0.1	0.0	11.5	0.0	0.0	40.9
11/6/2011	0.0	0.4	5.1	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	40.5
11/7/2011	0.0	1.2	5.1	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	41.4
11/8/2011	0.0	2.1	5.0	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	42.2
11/9/2011	0.0	0.4	4.9	0.0	1.0	51.7	6.0	0.0	0.1	0.0	11.5	0.0	0.0	40.6
11/10/2011	0.0	0.9	5.1	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	41.0
11/11/2011	0.0	1.0	5.1	0.0	1.0	51.7	6.2	0.0	0.1	0.0	11.5	0.0	0.0	41.1
11/12/2011	0.0	3.8	5.0	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	43.9
11/13/2011	0.0	1.3	5.0	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	41.5
11/14/2011	0.0	2.5	5.0	0.0	1.0	51.7	6.0	0.0	0.1	0.0	11.5	0.0	0.0	42.6
11/15/2011	0.0	1.4	5.0	0.0	1.0	51.7	6.0	0.0	0.1	0.0	11.5	0.0	0.0	41.5
11/16/2011	0.0	2.1	5.1	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	42.3
11/17/2011	0.0	1.6	5.1	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	41.8
11/18/2011	0.0	1.1	5.0	0.0	1.0	51.7	6.0	0.0	0.1	0.0	11.5	0.0	0.0	41.3
11/19/2011	0.0	0.8	5.0	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	40.9
11/20/2011	0.0	0.3	5.0	0.0	1.0	51.7	6.0	0.0	0.1	0.0	11.5	0.0	0.0	40.4
11/21/2011	0.0	0.2	5.1	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	40.3
11/22/2011	0.0	1.1	5.1	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	41.2
11/23/2011	0.0	1.0	5.1	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	41.1
11/24/2011	0.0	3.0	5.1	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	43.1
11/25/2011	0.0	2.4	5.0	0.0	1.0	51.7	6.0	0.0	0.1	0.0	11.5	0.0	0.0	42.6
11/26/2011	0.0	1.3	5.0	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	41.5
11/27/2011	0.0	1.1	5.1	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	41.3
11/28/2011	0.0	2.2	5.0	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	42.4
11/29/2011	0.0	2.0	5.1	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	42.2
11/30/2011	0.0	1.1	5.1	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	41.2
12/1/2011	0.0	1.9	5.0	0.0	1.0	51.7	6.0	0.0	0.1	0.0	11.5	0.0	0.0	42.0
12/2/2011	0.0	2.2	5.1	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	42.4
12/3/2011	0.0	0.7	5.1	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	40.9
12/4/2011	0.0	2.3	5.0	0.0	1.0	51.7	6.0	0.0	0.1	0.0	11.5	0.0	0.0	42.4
12/5/2011	0.0	2.4	5.1	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	42.6
12/6/2011	0.0	2.2	5.1	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	42.4
12/7/2011	0.0	1.6	5.0	0.0	1.0	51.7	6.0	0.0	0.1	0.0	11.5	0.0	0.0	41.8
12/8/2011	0.0	1.6	5.1	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	41.8
12/9/2011	0.0	6.0	5.1	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	46.1
12/10/2011	0.0	1.4	5.0	0.0	1.0	51.7	6.0	0.0	0.1	0.0	11.5	0.0	0.0	41.5
12/11/2011	0.0	2.9	5.0	0.0	1.0	51.7	6.0	0.0	0.1	0.0	11.5	0.0	0.0	43.1
12/12/2011	0.0	1.8	5.1	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	41.9
12/13/2011	0.0	2.6	5.1	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	42.8
12/14/2011	0.0	2.4	5.1	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	42.6
12/15/2011	0.0	4.1	5.0	0.0	1.0	51.7	6.0	0.0	0.1	0.0	11.5	0.0	0.0	44.2

Table F1-1: RGCP Channel Water Budget Equation Analysis Segment 1

2010-12 Study Period

(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	MODFLOW Floodplain Recharge	Open Water Channel Evaporation	MODFLOW Riparian Evapo- transpiration	Diversions Authorized (Percha, Arrey, & Leasburg)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
12/16/2011	0.0	2.4	5.1	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	42.6
12/17/2011	0.0	1.7	5.1	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	41.8
12/18/2011	0.0	2.5	5.1	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	42.7
12/19/2011	0.0	2.6	5.1	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	42.8
12/20/2011	0.0	4.4	5.1	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	44.6
12/21/2011	0.0	1.9	5.1	0.0	1.0	51.7	6.2	0.0	0.1	0.0	11.5	0.0	0.0	42.0
12/22/2011	0.0	1.6	5.1	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	41.8
12/23/2011	0.0	2.6	5.1	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	42.7
12/24/2011	0.0	0.7	5.0	0.0	1.0	51.7	6.0	0.0	0.1	0.0	11.5	0.0	0.0	40.8
12/25/2011	0.0	2.4	5.1	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	42.6
12/26/2011	0.0	4.1	5.1	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	44.2
12/27/2011	0.0	2.5	5.0	0.0	1.0	51.7	6.0	0.0	0.1	0.0	11.5	0.0	0.0	42.7
12/28/2011	0.0	2.5	5.1	0.0	1.0	51.7	6.2	0.0	0.1	0.0	11.5	0.0	0.0	42.6
12/29/2011	0.0	2.5	5.1	0.0	1.0	51.7	6.2	0.0	0.1	0.0	11.5	0.0	0.0	42.6
12/30/2011	0.0	1.3	5.1	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	41.5
12/31/2011	0.0	0.8	5.1	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	41.0
1/1/2012	0.0	1.1	5.1	0.0	1.0	51.7	6.2	0.0	0.1	0.0	11.5	0.0	0.0	41.2
1/2/2012	0.0	1.7	5.2	0.0	1.0	51.7	6.2	0.0	0.1	0.0	11.5	0.0	0.0	41.8
1/3/2012	0.0	1.5	5.1	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	41.6
1/4/2012	0.0	1.3	5.1	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	41.5
1/5/2012	0.0	1.6	5.2	0.0	1.0	51.7	6.2	0.0	0.1	0.0	11.5	0.0	0.0	41.8
1/6/2012	0.0	1.9	5.1	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	42.0
1/7/2012	0.0	1.5	5.1	0.0	1.0	51.7	6.2	0.0	0.1	0.0	11.5	0.0	0.0	41.7
1/8/2012	0.0	2.5	5.1	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	42.7
1/9/2012	0.0	1.6	5.1	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	41.7
1/10/2012	0.0	1.0	5.1	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	41.1
1/11/2012	0.0	1.7	5.1	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	41.8
1/12/2012	0.0	2.6	5.1	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	42.8
1/13/2012	0.0	1.2	5.2	0.0	1.0	51.7	6.2	0.0	0.1	0.0	11.5	0.0	0.0	41.4
1/14/2012	0.0	2.1	5.2	0.0	1.0	51.7	6.2	0.0	0.1	0.0	11.5	0.0	0.0	42.3
1/15/2012	0.0	1.1	5.1	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	41.3
1/16/2012	0.0	0.4	5.1	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	40.5
1/17/2012	0.0	2.3	5.1	0.0	1.0	51.7	6.2	0.0	0.1	0.0	11.5	0.0	0.0	42.4
1/18/2012	0.0	2.6	5.1	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	42.8
1/19/2012	0.0	0.8	5.2	0.0	1.0	51.7	6.2	0.0	0.1	0.0	11.5	0.0	0.0	41.0
1/20/2012	0.0	1.2	5.0	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	41.4
1/21/2012	0.0	2.0	5.1	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	42.2
1/22/2012	0.0	1.2	5.1	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	41.3
1/23/2012	0.0	0.4	5.2	0.0	1.0	51.7	6.2	0.0	0.1	0.0	11.5	0.0	0.0	40.6
1/24/2012	0.0	0.8	5.2	0.0	1.0	51.7	6.2	0.0	0.1	0.0	11.5	0.0	0.0	40.9
1/25/2012	0.0	2.0	5.0	0.0	1.0	51.7	6.0	0.0	0.1	0.0	11.5	0.0	0.0	42.2
1/26/2012	0.0	1.3	5.1	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	41.5
1/27/2012	0.0	1.6	5.0	0.0	1.0	51.7	6.0	0.0	0.1	0.0	11.5	0.0	0.0	41.7
1/28/2012	0.0	2.7	5.1	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	42.8
1/29/2012	0.0	2.0	5.0	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	42.2
1/30/2012	0.0	1.9	5.1	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	42.0
1/31/2012	0.0	2.8	5.2	0.0	1.0	51.7	6.2	0.0	0.1	0.0	11.5	0.0	0.0	42.9
2/1/2012	0.0	1.2	5.1	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	41.4
2/2/2012	0.0	1.6	5.2	0.0	1.0	51.7	6.2	0.0	0.1	0.0	11.5	0.0	0.0	41.7
2/3/2012	0.0	1.1	5.1	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	41.2
2/4/2012	0.0	1.2	5.2	0.0	1.0	51.7	6.3	0.0	0.1	0.0	11.5	0.0	0.0	41.4

Table F1-1: RGCP Channel Water Budget Equation Analysis Segment 1														
2010-12 Study Period														
(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	MODFLOW Floodplain Recharge	Open Water Channel Evaporation	MODFLOW Riparian Evapo-transpiration	Diversions Authorized (Percha, Arrey, & Leasburg)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
2/5/2012	0.0	1.5	5.1	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	41.7
2/6/2012	0.0	0.7	5.1	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	40.9
2/7/2012	0.0	0.5	4.9	0.0	1.0	51.7	6.0	0.0	0.1	0.0	11.5	0.0	0.0	40.6
2/8/2012	0.0	1.9	5.0	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	42.0
2/9/2012	0.0	2.2	5.0	0.0	1.0	51.7	6.0	0.0	0.1	0.0	11.5	0.0	0.0	42.3
2/10/2012	0.0	1.3	5.0	0.0	1.0	51.7	6.0	0.0	0.1	0.0	11.5	0.0	0.0	41.5
2/11/2012	0.0	1.1	5.0	0.0	1.0	51.7	6.0	0.0	0.1	0.0	11.5	0.0	0.0	41.3
2/12/2012	0.0	2.1	5.1	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	42.3
2/13/2012	0.0	1.2	5.1	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	41.4
2/14/2012	0.0	1.8	5.1	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	41.9
2/15/2012	0.0	0.7	5.0	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	40.9
2/16/2012	0.0	0.7	5.1	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	40.9
2/17/2012	0.0	2.9	5.1	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	43.0
2/18/2012	0.0	0.8	5.2	0.0	1.0	51.7	6.2	0.0	0.1	0.0	11.5	0.0	0.0	41.0
2/19/2012	0.0	1.0	5.0	0.0	1.0	51.7	6.0	0.0	0.1	0.0	11.5	0.0	0.0	41.1
2/20/2012	0.0	1.0	5.1	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	41.1
2/21/2012	0.0	2.9	5.1	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	43.0
2/22/2012	0.0	1.3	5.1	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	41.4
2/23/2012	0.0	3.7	5.1	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	43.8
2/24/2012	0.0	1.2	5.1	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	41.3
2/25/2012	0.0	2.8	5.1	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	42.9
2/26/2012	0.0	1.7	5.0	0.0	1.0	51.7	6.0	0.0	0.1	0.0	11.5	0.0	0.0	41.9
2/27/2012	0.0	0.8	5.0	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	40.9
2/28/2012	0.0	2.1	5.1	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	42.2
2/29/2012	0.0	0.0	5.1	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	40.1
3/1/2012	0.0	1.7	5.1	0.0	1.0	28.8	6.1	0.0	6.3	6.2	33.7	0.0	0.0	-15.7
3/2/2012	0.0	0.9	5.1	0.0	1.0	28.8	6.1	0.0	6.3	6.2	33.7	0.0	0.0	-16.5
3/3/2012	0.0	0.9	5.1	0.0	1.0	28.8	6.1	0.0	6.3	6.2	33.7	0.0	0.0	-16.5
3/4/2012	0.0	1.9	5.1	0.0	1.0	28.8	6.1	0.0	6.3	6.2	33.7	0.0	0.0	-15.6
3/5/2012	0.0	0.3	5.0	0.0	1.0	28.8	6.0	0.0	6.3	6.2	33.7	0.0	0.0	-17.1
3/6/2012	0.0	1.1	5.1	0.0	1.0	28.8	6.1	0.0	6.3	6.2	33.7	0.0	0.0	-16.4
3/7/2012	0.0	1.0	5.0	0.0	1.0	28.8	6.0	0.0	6.3	6.2	33.7	0.0	0.0	-16.4
3/8/2012	0.0	1.1	5.0	0.0	1.0	28.8	6.0	0.0	6.3	6.2	33.7	0.0	0.0	-16.4
3/9/2012	0.0	0.6	5.1	0.0	1.0	28.8	6.1	0.0	6.3	6.2	33.7	0.0	0.0	-16.8
3/10/2012	0.0	1.1	5.1	0.0	1.0	28.8	6.1	0.0	6.3	6.2	33.7	0.0	0.0	-16.3
3/11/2012	0.0	1.2	5.1	0.0	1.0	28.8	6.1	0.0	6.3	6.2	33.7	0.0	0.0	-16.2
3/12/2012	0.0	1.3	5.1	0.0	1.0	28.8	6.1	0.0	6.3	6.2	33.7	0.0	0.0	-16.1
3/13/2012	0.0	0.6	5.0	0.0	1.0	28.8	6.0	0.0	6.3	6.2	33.7	0.0	0.0	-16.8
3/14/2012	0.0	0.8	5.0	0.0	1.0	28.8	6.0	0.0	6.3	6.2	33.7	0.0	0.0	-16.6
3/15/2012	0.0	0.7	5.0	0.0	1.0	28.8	6.0	0.0	6.3	6.2	33.7	0.0	0.0	-16.8
3/16/2012	0.0	0.4	5.1	0.0	1.0	28.8	6.1	0.0	6.3	6.2	33.7	0.0	0.0	-17.0
3/17/2012	0.0	0.6	5.0	0.0	1.0	28.8	6.0	0.0	6.3	6.2	33.7	0.0	0.0	-16.8
3/18/2012	0.0	1.2	5.1	0.0	1.0	28.8	6.1	0.0	6.3	6.2	33.7	0.0	0.0	-16.3
3/19/2012	0.0	0.8	5.0	0.0	1.0	28.8	6.0	0.0	6.3	6.2	33.7	0.0	0.0	-16.6
3/20/2012	0.0	1.2	5.1	0.0	1.0	28.8	6.1	0.0	6.3	6.2	33.7	0.0	0.0	-16.2
3/21/2012	0.0	0.7	5.1	0.0	1.0	28.8	6.1	0.0	6.3	6.2	33.7	0.0	0.0	-16.8
3/22/2012	0.0	2.1	5.0	0.0	1.0	28.8	6.0	0.0	6.3	6.2	33.7	0.0	0.0	-15.4
3/23/2012	0.0	0.5	5.0	0.0	1.0	28.8	6.1	0.0	6.3	6.2	33.7	0.0	0.0	-16.9
3/24/2012	0.0	0.2	5.0	0.0	1.0	28.8	6.0	0.0	6.3	6.2	33.7	0.0	0.0	-17.2
3/25/2012	0.0	0.8	5.0	0.0	1.0	28.8	6.1	0.0	6.3	6.2	33.7	0.0	0.0	-16.6
3/26/2012	0.0	2.2	5.0	0.0	1.0	28.8	6.0	0.0	6.3	6.2	33.7	0.0	0.0	-15.2

Table F1-1: RGCP Channel Water Budget Equation Analysis Segment 1

2010-12 Study Period

(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	MODFLOW Floodplain Recharge	Open Water Channel Evaporation	MODFLOW Riparian Evapo- transpiration	Diversions Authorized (Percha, Arrey, & Leasburg)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
3/27/2012	0.0	1.4	5.0	0.0	1.0	28.8	6.0	0.0	6.3	6.2	33.7	0.0	0.0	-16.0
3/28/2012	0.0	0.1	5.1	0.0	1.0	28.8	6.1	0.0	6.3	6.2	33.7	0.0	0.0	-17.3
3/29/2012	0.0	0.8	5.1	0.0	1.0	28.8	6.1	0.0	6.3	6.2	33.7	0.0	0.0	-16.6
3/30/2012	0.0	0.3	5.0	0.0	1.0	28.8	6.0	0.0	6.3	6.2	33.7	0.0	0.0	-17.2
3/31/2012	0.0	0.1	5.0	0.0	1.0	28.8	6.0	0.0	6.3	6.2	33.7	0.0	0.0	-17.4
4/1/2012	868.8	0.1	0.0	0.0	1.0	28.8	492.1	29.2	6.3	13.7	33.7	0.0	0.0	323.6
4/2/2012	2320.7	0.7	0.0	0.0	1.0	28.8	493.0	70.1	6.3	13.7	33.7	0.0	0.0	1734.5
4/3/2012	2320.7	0.6	0.0	0.0	1.0	28.8	2189.9	94.2	6.3	13.7	33.7	0.0	0.0	13.3
4/4/2012	2538.8	0.8	0.0	0.0	1.0	28.8	2234.0	97.3	6.3	13.7	33.7	0.0	0.0	184.6
4/5/2012	2895.9	1.2	0.0	0.0	1.0	28.8	2464.8	104.5	6.3	13.7	33.7	0.0	0.0	304.0
4/6/2012	2856.2	0.7	0.0	0.0	1.0	28.8	2761.5	107.4	6.3	13.7	33.7	0.0	0.0	-35.8
4/7/2012	2757.0	1.3	0.0	0.0	1.0	28.8	2717.1	105.7	6.3	13.7	33.7	0.0	0.0	-88.2
4/8/2012	2757.0	0.6	0.0	0.0	1.0	28.8	2634.8	104.7	6.3	13.7	33.7	0.0	0.0	-5.8
4/9/2012	2737.2	0.1	0.0	0.0	1.0	28.8	2631.6	104.4	6.3	13.7	33.7	0.0	0.0	-22.7
4/10/2012	2717.4	0.2	0.0	0.0	1.0	28.8	2612.4	104.0	6.3	13.7	33.7	0.0	0.0	-22.7
4/11/2012	2717.4	1.3	0.0	0.0	1.0	28.8	2596.0	103.8	6.3	13.7	33.7	0.0	0.0	-5.0
4/12/2012	2717.4	1.7	0.0	0.0	1.0	28.8	2595.5	103.8	6.3	13.7	33.7	0.0	0.0	-4.0
4/13/2012	2320.7	0.1	221.4	0.0	1.0	28.8	2543.1	98.3	6.3	13.7	33.7	0.0	0.0	-123.1
4/14/2012	1904.1	0.3	268.2	0.0	1.0	28.8	2173.4	88.3	6.3	13.7	33.7	0.0	0.0	-112.9
4/15/2012	1884.3	1.0	0.0	0.0	1.0	28.8	1814.5	83.3	6.3	13.7	33.7	0.0	0.0	-36.4
4/16/2012	1884.3	0.4	0.0	0.0	1.0	28.8	1788.1	83.0	6.3	13.7	33.7	0.0	0.0	-10.3
4/17/2012	1884.3	2.6	0.0	0.0	1.0	28.8	1787.3	83.0	6.3	13.7	33.7	0.0	0.0	-7.3
4/18/2012	1884.3	0.3	0.0	0.0	1.0	28.8	1787.4	83.0	6.3	13.7	33.7	0.0	0.0	-9.6
4/19/2012	1810.9	0.3	0.0	0.0	1.0	28.8	1782.2	82.0	6.3	13.7	33.7	0.0	0.0	-76.9
4/20/2012	1640.3	0.9	66.5	0.0	1.0	28.8	1707.9	78.7	6.3	13.7	33.7	0.0	0.0	-102.7
4/21/2012	1578.8	0.1	0.0	0.0	1.0	28.8	1555.0	75.6	6.3	13.7	33.7	0.0	0.0	-75.4
4/22/2012	1578.8	0.3	0.0	0.0	1.0	28.8	1494.9	74.7	6.3	13.7	33.7	0.0	0.0	-14.3
4/23/2012	1586.8	2.6	0.0	0.0	1.0	28.8	1492.0	74.8	6.3	13.7	33.7	0.0	0.0	-1.4
4/24/2012	1604.6	1.0	0.0	0.0	1.0	28.8	1499.5	75.2	6.3	13.7	33.7	0.0	0.0	7.0
4/25/2012	1729.6	0.2	0.0	0.0	1.0	28.8	1520.2	77.3	6.3	13.7	33.7	0.0	0.0	108.4
4/26/2012	1828.8	1.9	0.0	0.0	1.0	28.8	1638.6	80.3	6.3	13.7	33.7	0.0	0.0	87.9
4/27/2012	2009.3	1.5	0.0	0.0	1.0	28.8	1735.5	82.7	6.3	13.7	33.7	99.2	1.0	68.5
4/28/2012	1826.8	0.8	162.3	0.0	1.0	28.8	1789.8	79.7	6.3	13.7	33.7	200.3	2.0	-105.8
4/29/2012	1602.6	1.2	136.0	0.0	1.0	28.8	1541.3	72.9	6.3	13.7	33.7	198.3	2.0	-98.6
4/30/2012	1600.7	1.5	0.0	0.0	1.0	28.8	1339.4	69.7	6.3	13.7	33.7	200.3	2.0	-33.1
5/1/2012	1612.6	0.4	0.0	0.0	1.0	28.8	1320.0	69.8	6.3	21.5	33.7	200.3	2.0	-10.8
5/2/2012	1646.3	1.2	0.0	0.0	1.0	28.8	1329.0	69.5	6.3	21.5	33.7	261.6	2.6	-46.9
5/3/2012	1660.2	2.5	0.0	0.0	1.0	28.8	1305.5	68.8	6.3	21.5	33.7	297.9	3.0	-44.2
5/4/2012	912.4	1.4	659.8	0.0	1.0	28.8	1275.3	57.6	6.3	21.5	33.7	297.9	3.0	-91.9
5/5/2012	317.4	1.0	768.3	0.0	1.0	28.8	788.8	35.4	6.3	21.5	33.7	297.9	3.0	-70.1
5/6/2012	307.4	0.8	560.5	0.0	1.0	28.8	560.7	21.7	6.3	21.5	33.7	308.2	3.1	-56.7
5/7/2012	299.5	1.6	501.3	0.0	1.0	28.8	493.6	18.6	6.3	21.5	33.7	308.2	3.1	-52.8
5/8/2012	188.4	0.3	858.5	0.0	1.0	28.8	903.2	19.1	6.3	21.5	33.7	144.8	1.4	-52.9
5/9/2012	0.0	0.9	825.8	0.0	1.0	28.8	826.8	19.0	6.3	21.5	33.7	0.0	0.0	-50.8
5/10/2012	0.0	0.3	490.5	0.0	1.0	28.8	491.5	18.9	6.3	21.5	33.7	0.0	0.0	-51.3
5/11/2012	0.0	1.1	491.1	0.0	1.0	28.8	492.1	18.9	6.3	21.5	33.7	0.0	0.0	-50.6
5/12/2012	0.0	0.4	491.0	0.0	1.0	28.8	492.0	18.9	6.3	21.5	33.7	0.0	0.0	-51.2
5/13/2012	0.0	0.7	491.1	0.0	1.0	28.8	492.1	18.9	6.3	21.5	33.7	0.0	0.0	-51.0
5/14/2012	0.0	1.4	491.1	0.0	1.0	28.8	492.1	18.9	6.3	21.5	33.7	0.0	0.0	-50.2
5/15/2012	0.0	0.6	491.0	0.0	1.0	28.8	492.0	18.9	6.3	21.5	33.7	0.0	0.0	-51.1
5/16/2012	216.2	1.6	427.5	0.0	1.0	28.8	492.0	20.8	6.3	21.5	33.7	152.7	1.5	-53.4



Table F1-1: RGCP Channel Water Budget Equation Analysis Segment 1

2010-12 Study Period

(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	MODFLOW Floodplain Recharge	Open Water Channel Evaporation	MODFLOW Riparian Evapo- transpiration	Diversions Authorized (Percha, Arrey, & Leasburg)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
5/17/2012	448.3	1.8	342.2	0.0	1.0	28.8	492.0	25.9	6.3	21.5	33.7	299.5	3.0	-59.9
5/18/2012	303.5	2.6	869.4	0.0	1.0	28.8	878.6	28.7	6.3	21.5	33.7	295.3	3.0	-61.7
5/19/2012	287.6	0.7	757.6	0.0	1.0	28.8	750.6	21.9	6.3	21.5	33.7	295.5	3.0	-56.8
5/20/2012	285.6	1.1	506.8	0.0	1.0	28.8	498.0	18.5	6.3	21.5	33.7	295.5	3.0	-53.1
5/21/2012	317.4	0.5	465.1	0.0	1.0	28.8	491.9	18.6	6.3	21.5	33.7	291.6	2.9	-53.7
5/22/2012	440.3	1.5	429.7	0.0	1.0	28.8	492.2	19.4	6.3	21.5	33.7	378.8	3.8	-54.4
5/23/2012	442.3	1.7	467.3	0.0	1.0	28.8	492.2	21.0	6.3	21.5	33.7	418.5	4.2	-56.2
5/24/2012	448.3	1.6	692.6	0.0	1.0	28.8	709.4	19.7	6.3	21.5	33.7	432.4	4.3	-55.1
5/25/2012	438.3	2.1	485.2	0.0	1.0	28.8	492.2	18.8	6.3	21.5	33.7	432.4	4.3	-53.7
5/26/2012	426.4	0.5	496.4	0.0	1.0	28.8	491.5	18.8	6.3	21.5	33.7	432.4	4.3	-55.4
5/27/2012	426.4	3.0	496.9	0.0	1.0	28.8	492.0	18.6	6.3	21.5	33.7	432.4	4.3	-52.7
5/28/2012	426.4	1.8	497.1	0.0	1.0	28.8	492.2	18.4	6.3	21.5	33.7	432.4	4.3	-53.7
5/29/2012	2070.7	0.8	0.0	0.0	1.0	28.8	492.1	39.2	6.3	21.5	33.7	442.3	4.4	1061.7
5/30/2012	2525.0	1.1	0.0	0.0	1.0	28.8	1407.5	82.9	6.3	21.5	33.7	442.3	4.4	557.3
5/31/2012	2271.1	0.8	67.9	0.0	1.0	28.8	1959.2	84.7	6.3	21.5	33.7	380.8	3.8	-120.5
6/1/2012	2584.5	1.3	0.0	0.0	1.0	28.8	1760.6	86.1	6.3	22.1	33.7	380.8	3.8	322.1
6/2/2012	2993.1	1.3	0.0	0.0	1.0	28.8	1846.7	96.4	6.3	22.1	33.7	618.8	6.2	393.9
6/3/2012	2989.1	2.4	0.0	0.0	1.0	28.8	2174.3	101.2	6.3	22.1	33.7	700.8	7.0	-24.1
6/4/2012	3026.8	2.1	0.0	0.0	1.0	28.8	2197.9	101.7	6.3	22.1	33.7	503.2	5.0	188.7
6/5/2012	3383.8	0.1	0.0	0.0	1.0	28.8	2285.6	107.1	6.3	22.1	33.7	515.7	5.2	438.1
6/6/2012	3645.6	0.8	0.0	0.0	1.0	28.8	2647.5	116.5	6.3	22.1	33.7	670.3	6.7	173.1
6/7/2012	3665.5	3.7	13.6	0.0	1.0	28.8	2991.0	120.4	6.3	22.1	33.7	689.0	6.9	-156.9
6/8/2012	3961.0	0.6	0.0	0.0	1.0	28.8	2847.9	122.3	6.3	22.1	33.7	842.1	8.4	108.5
6/9/2012	4153.4	0.9	0.0	0.0	1.0	28.8	2915.6	126.2	6.3	22.1	33.7	940.7	9.4	130.1
6/10/2012	4143.5	0.7	0.0	0.0	1.0	28.8	3188.5	127.9	6.3	22.1	33.7	793.2	7.9	-5.6
6/11/2012	3984.8	2.2	0.0	0.0	1.0	28.8	3286.1	125.6	6.3	22.1	33.7	673.4	6.7	-137.1
6/12/2012	3887.6	1.6	0.0	0.0	1.0	28.8	3137.2	123.0	6.3	22.1	33.7	706.5	7.1	-116.9
6/13/2012	3689.3	0.8	127.2	0.0	1.0	28.8	3000.9	119.6	6.3	22.1	33.7	816.6	8.2	-160.3
6/14/2012	3391.7	1.0	188.5	0.0	1.0	28.8	2809.4	113.3	6.3	22.1	33.7	771.9	7.7	-153.3
6/15/2012	3369.9	0.6	0.0	0.0	1.0	28.8	2492.9	109.1	6.3	22.1	33.7	622.2	6.2	107.7
6/16/2012	3459.2	1.6	0.0	0.0	1.0	28.8	2435.6	109.8	6.3	22.1	33.7	655.6	6.6	220.9
6/17/2012	3465.1	2.4	0.0	0.0	1.0	28.8	2496.7	113.4	6.3	22.1	33.7	663.2	6.6	155.2
6/18/2012	3292.6	5.0	0.0	0.0	1.0	28.8	2639.2	112.2	6.3	22.1	33.7	632.9	6.3	-125.4
6/19/2012	3272.7	0.8	0.0	0.0	1.0	28.8	2510.0	110.8	6.3	22.1	33.7	598.4	6.0	16.0
6/20/2012	3312.4	4.4	0.0	0.0	1.0	28.8	2543.1	111.8	6.3	22.1	33.7	689.4	6.9	-66.7
6/21/2012	3362.0	1.7	0.0	0.0	1.0	28.8	2619.7	112.9	6.3	22.1	33.7	705.8	7.1	-114.1
6/22/2012	3371.9	2.8	0.0	0.0	1.0	28.8	2628.1	112.3	6.3	22.1	33.7	734.4	7.3	-139.7
6/23/2012	3350.1	3.3	0.0	0.0	1.0	28.8	2570.3	110.6	6.3	22.1	33.7	728.1	7.3	-95.2
6/24/2012	3354.0	3.0	0.0	0.0	1.0	28.8	2453.9	109.9	6.3	22.1	33.7	791.2	7.9	-38.2
6/25/2012	3437.4	1.9	0.0	0.0	1.0	28.8	2404.9	110.9	6.3	22.1	33.7	827.2	8.3	55.8
6/26/2012	3504.8	3.1	0.0	0.0	1.0	28.8	2526.8	112.4	6.3	22.1	33.7	783.3	7.8	45.2
6/27/2012	3340.2	3.9	8.5	0.0	1.0	28.8	2591.1	111.1	6.3	22.1	33.7	758.6	7.6	-148.1
6/28/2012	3159.7	3.7	46.2	0.0	1.0	28.8	2454.0	107.1	6.3	22.1	33.7	752.8	7.5	-144.3
6/29/2012	3221.2	8.5	0.0	0.0	1.0	28.8	2305.2	106.0	6.3	22.1	33.7	747.3	7.5	31.4
6/30/2012	3276.7	3.1	0.0	0.0	1.0	28.8	2353.0	107.3	6.3	22.1	33.7	746.6	7.5	33.2
7/1/2012	3290.6	5.6	0.0	0.0	1.0	28.8	2396.7	108.0	6.3	16.4	33.7	727.4	7.3	30.1
7/2/2012	3296.5	6.7	0.0	0.0	1.0	28.8	2410.3	108.3	6.3	16.4	33.7	744.9	7.4	5.7
7/3/2012	3106.1	4.3	0.0	0.0	1.0	28.8	2405.1	106.1	6.3	16.4	33.7	651.6	6.5	-85.5
7/4/2012	2989.1	4.8	0.0	0.0	1.0	28.8	2285.9	102.6	6.3	16.4	33.7	541.4	5.4	32.0
7/5/2012	2802.6	9.3	0.0	0.0	1.0	28.8	2170.6	99.9	6.3	16.4	33.7	533.5	5.3	-24.0
7/6/2012	2651.9	5.1	0.0	0.0	1.0	28.8	2031.3	97.7	6.3	16.4	33.7	580.5	5.8	-84.9

Table F1-1: RGCP Channel Water Budget Equation Analysis Segment 1

2010-12 Study Period

(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	MODFLOW Floodplain Recharge	Open Water Channel Evaporation	MODFLOW Riparian Evapo- transpiration	Diversions Authorized (Percha, Arrey, & Leasburg)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
7/7/2012	2441.7	7.8	75.3	0.0	1.0	28.8	1896.9	94.0	6.3	16.4	33.7	621.1	6.2	-120.0
7/8/2012	2217.5	6.5	0.0	0.0	1.0	28.8	1684.7	88.5	6.3	16.4	33.7	416.0	4.2	4.0
7/9/2012	2231.4	5.8	0.0	0.0	1.0	28.8	1522.9	86.2	6.3	16.4	33.7	379.7	3.8	217.9
7/10/2012	1933.9	4.6	0.0	0.0	1.0	28.8	1539.5	85.2	6.3	16.4	33.7	367.6	3.7	-84.2
7/11/2012	1691.9	4.9	128.0	0.0	1.0	28.8	1497.0	80.9	6.3	16.4	33.7	323.9	3.2	-106.8
7/12/2012	1763.3	5.3	0.0	0.0	1.0	28.8	1307.6	78.6	6.3	16.4	33.7	319.6	3.2	32.9
7/13/2012	1892.2	6.7	0.0	0.0	1.0	28.8	1346.1	81.2	6.3	16.4	33.7	333.5	3.3	108.1
7/14/2012	2001.3	4.4	0.0	0.0	1.0	28.8	1429.2	84.6	6.3	16.4	33.7	359.6	3.6	102.2
7/15/2012	2086.6	13.7	0.0	0.0	1.0	28.8	1548.9	87.3	6.3	16.4	33.7	358.0	3.6	76.0
7/16/2012	2804.6	3.4	0.0	0.0	1.0	28.8	1648.8	92.6	6.3	16.4	33.7	763.2	7.6	269.2
7/17/2012	3481.0	3.8	0.0	0.0	1.0	28.8	2012.2	105.8	6.3	16.4	33.7	747.5	7.5	585.3
7/18/2012	3770.6	6.5	0.0	0.0	1.0	28.8	2633.2	116.3	6.3	16.4	33.7	764.9	7.6	228.4
7/19/2012	3873.7	6.3	0.0	0.0	1.0	28.8	2881.7	120.4	6.3	16.4	33.7	759.0	7.6	84.7
7/20/2012	3865.8	7.0	0.0	0.0	1.0	28.8	2930.2	121.7	6.3	16.4	33.7	774.0	7.7	12.4
7/21/2012	3834.0	8.3	0.0	0.0	1.0	28.8	2858.4	121.3	6.3	16.4	33.7	874.7	8.7	-47.4
7/22/2012	3814.2	7.8	0.0	0.0	1.0	28.8	2822.3	120.8	6.3	16.4	33.7	861.0	8.6	-17.3
7/23/2012	3849.9	6.4	0.0	0.0	1.0	28.8	2819.3	121.1	6.3	16.4	33.7	867.2	8.7	13.3
7/24/2012	3891.6	7.6	0.0	0.0	1.0	28.8	2842.1	122.0	6.3	16.4	33.7	867.2	8.7	32.5
7/25/2012	3814.2	6.2	0.0	0.0	1.0	28.8	2877.4	121.2	6.3	16.4	33.7	875.3	8.8	-88.8
7/26/2012	3683.3	6.5	83.7	0.0	1.0	28.8	2763.5	116.7	6.3	16.4	33.7	1004.5	10.0	-147.9
7/27/2012	3627.8	5.7	0.0	0.0	1.0	28.8	2540.6	113.6	6.3	16.4	33.7	1001.7	10.0	-59.1
7/28/2012	3536.5	6.0	0.0	0.0	1.0	28.8	2490.0	112.5	6.3	16.4	33.7	953.7	9.5	-49.9
7/29/2012	3465.1	7.6	0.0	0.0	1.0	28.8	2456.2	112.4	6.3	16.4	33.7	865.9	8.7	2.9
7/30/2012	3562.3	8.7	0.0	0.0	1.0	28.8	2476.1	113.3	6.3	16.4	33.7	905.9	9.1	40.0
7/31/2012	3750.7	6.7	0.0	0.0	1.0	28.8	2532.2	115.9	6.3	16.4	33.7	962.5	9.6	110.6
8/1/2012	3768.6	7.2	0.0	0.0	1.0	28.8	2675.5	117.9	6.3	15.5	33.7	911.1	9.1	36.5
8/2/2012	3554.4	8.7	53.2	0.0	1.0	28.8	2666.3	115.3	6.3	15.5	33.7	942.4	9.4	-142.7
8/3/2012	3377.9	8.8	24.9	0.0	1.0	28.8	2457.6	110.8	6.3	15.5	33.7	946.2	9.5	-138.1
8/4/2012	3322.3	6.8	0.0	0.0	1.0	28.8	2336.7	108.5	6.3	15.5	33.7	896.9	9.0	-47.6
8/5/2012	3302.5	6.6	0.0	0.0	1.0	28.8	2332.8	107.8	6.3	15.5	33.7	856.5	8.6	-22.3
8/6/2012	3385.8	5.4	0.0	0.0	1.0	28.8	2335.0	108.8	6.3	15.5	33.7	857.4	8.6	55.7
8/7/2012	3564.3	6.8	0.0	0.0	1.0	28.8	2426.8	112.2	6.3	15.5	33.7	846.6	8.5	151.4
8/8/2012	3697.2	5.6	0.0	0.0	1.0	28.8	2597.8	115.7	6.3	15.5	33.7	862.8	8.6	92.3
8/9/2012	3744.8	7.8	0.0	0.0	1.0	28.8	2640.3	117.5	6.3	15.5	33.7	923.1	9.2	36.7
8/10/2012	3875.7	7.3	0.0	0.0	1.0	28.8	2635.7	119.9	6.3	15.5	33.7	994.2	9.9	97.6
8/11/2012	4036.4	8.8	0.0	0.0	1.0	28.8	2795.1	123.4	6.3	15.5	33.7	956.2	9.6	135.2
8/12/2012	3994.7	8.6	0.0	0.0	1.0	28.8	2942.2	126.0	6.3	15.5	33.7	842.4	8.4	58.7
8/13/2012	3978.8	10.2	0.0	0.0	1.0	28.8	2991.3	125.9	6.3	15.5	33.7	881.2	8.8	-43.8
8/14/2012	2703.5	7.5	678.0	0.0	1.0	28.8	2824.0	112.4	6.3	15.5	33.7	558.5	5.6	-137.2
8/15/2012	1967.6	7.5	517.1	0.0	1.0	28.8	2220.9	93.2	6.3	15.5	33.7	264.9	2.6	-115.0
8/16/2012	1884.3	9.4	0.0	0.0	1.0	28.8	1853.1	84.0	6.3	15.5	33.7	11.5	0.1	-80.6
8/17/2012	1884.3	3.3	0.0	0.0	1.0	28.8	1777.9	83.0	6.3	15.5	33.7	11.5	0.1	-10.5
8/18/2012	1884.3	8.4	0.0	0.0	1.0	28.8	1776.0	83.0	6.3	15.5	33.7	11.5	0.1	-3.5
8/19/2012	1884.3	6.0	0.0	0.0	1.0	28.8	1776.1	83.0	6.3	15.5	33.7	11.5	0.1	-6.0
8/20/2012	1874.4	7.0	0.0	0.0	1.0	28.8	1775.4	82.8	6.3	15.5	33.7	11.5	0.1	-14.1
8/21/2012	1874.4	11.8	0.0	0.0	1.0	28.8	1766.5	82.8	6.3	15.5	33.7	11.5	0.1	-0.3
8/22/2012	1866.4	5.7	0.0	0.0	1.0	28.8	1765.8	82.6	6.3	15.5	33.7	11.5	0.1	-13.5
8/23/2012	1691.9	15.0	65.9	0.0	1.0	28.8	1747.3	80.1	6.3	15.5	33.7	11.5	0.1	-91.9
8/24/2012	1467.8	10.0	127.3	0.0	1.0	28.8	1584.6	74.6	6.3	15.5	33.7	11.5	0.1	-91.4
8/25/2012	1477.7	5.1	0.0	0.0	1.0	28.8	1387.9	71.7	6.3	15.5	33.7	11.5	0.1	-14.0
8/26/2012	1477.7	5.5	0.0	0.0	1.0	28.8	1382.0	71.8	6.3	15.5	33.7	11.5	0.1	-7.8

Table F1-1: RGCP Channel Water Budget Equation Analysis Segment 1

2010-12 Study Period

(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	MODFLOW Floodplain Recharge	Open Water Channel Evaporation	MODFLOW Riparian Evapo- transpiration	Diversions Authorized (Percha, Arrey, & Leasburg)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
8/27/2012	1477.7	4.6	0.0	0.0	1.0	28.8	1382.6	71.8	6.3	15.5	33.7	11.5	0.1	-9.3
8/28/2012	1418.2	2.1	0.0	0.0	1.0	28.8	1381.2	71.0	6.3	15.5	33.7	11.5	0.1	-69.0
8/29/2012	1378.5	6.6	0.0	0.0	1.0	28.8	1328.8	69.5	6.3	15.5	33.7	11.5	0.1	-50.3
8/30/2012	1394.4	7.3	0.0	0.0	1.0	28.8	1290.6	69.1	6.3	15.5	33.7	11.5	0.1	4.7
8/31/2012	1402.3	5.1	0.0	0.0	1.0	28.8	1301.1	69.5	6.3	15.5	33.7	11.5	0.1	-0.4
9/1/2012	1410.2	5.2	0.0	0.0	1.0	28.8	1309.4	69.7	6.3	12.4	33.7	11.5	0.1	2.1
9/2/2012	1418.2	5.6	0.0	0.0	1.0	28.8	1317.1	70.0	6.3	12.4	33.7	11.5	0.1	2.6
9/3/2012	1243.6	3.9	88.0	0.0	1.0	28.8	1321.2	67.5	6.3	12.4	33.7	11.5	0.1	-87.4
9/4/2012	1108.8	4.4	77.8	0.0	1.0	28.8	1176.1	62.9	6.3	12.4	33.7	11.5	0.1	-82.2
9/5/2012	1108.8	8.2	0.0	0.0	1.0	28.8	1048.4	60.6	6.3	12.4	33.7	11.5	0.1	-26.3
9/6/2012	1100.8	4.6	0.0	0.0	1.0	28.8	1027.1	60.3	6.3	12.4	33.7	11.5	0.1	-16.2
9/7/2012	1092.9	5.9	0.0	0.0	1.0	28.8	1020.8	60.1	6.3	12.4	33.7	11.5	0.1	-16.3
9/8/2012	1079.0	2.8	0.0	0.0	1.0	28.8	1013.2	59.8	6.3	12.4	33.7	11.5	0.1	-25.4
9/9/2012	1065.1	4.3	0.0	0.0	1.0	28.8	1000.9	59.3	6.3	12.4	33.7	11.5	0.1	-24.9
9/10/2012	1049.3	5.2	0.0	0.0	1.0	28.8	987.7	58.8	6.3	12.4	33.7	11.5	0.1	-26.3
9/11/2012	1035.4	4.7	0.0	0.0	1.0	28.8	973.1	58.4	6.3	12.4	33.7	11.5	0.1	-25.6
9/12/2012	1015.5	11.0	0.0	0.0	1.0	28.8	959.7	57.8	6.3	12.4	33.7	11.5	0.1	-25.1
9/13/2012	533.6	9.0	417.7	0.0	1.0	28.8	940.8	50.3	6.3	12.4	33.7	11.5	0.1	-65.1
9/14/2012	0.0	7.0	718.9	0.0	1.0	28.8	708.5	33.4	6.3	12.4	33.7	11.5	0.1	-50.2
9/15/2012	0.0	7.5	5.1	0.0	1.0	28.8	6.1	0.0	6.3	12.4	33.7	0.0	0.0	-16.1
9/16/2012	0.0	2.9	5.0	0.0	1.0	28.8	6.0	0.0	6.3	12.4	33.7	0.0	0.0	-20.8
9/17/2012	0.0	3.5	5.1	0.0	1.0	28.8	6.1	0.0	6.3	12.4	33.7	0.0	0.0	-20.2
9/18/2012	0.0	3.1	5.0	0.0	1.0	28.8	6.0	0.0	6.3	12.4	33.7	0.0	0.0	-20.6
9/19/2012	0.0	7.0	5.1	0.0	1.0	28.8	6.1	0.0	6.3	12.4	33.7	0.0	0.0	-16.6
9/20/2012	0.0	1.7	5.1	0.0	1.0	28.8	6.1	0.0	6.3	12.4	33.7	0.0	0.0	-21.9
9/21/2012	0.0	5.5	5.0	0.0	1.0	28.8	6.1	0.0	6.3	12.4	33.7	0.0	0.0	-18.1
9/22/2012	0.0	5.8	5.0	0.0	1.0	28.8	6.0	0.0	6.3	12.4	33.7	0.0	0.0	-17.8
9/23/2012	0.0	7.3	5.1	0.0	1.0	28.8	6.1	0.0	6.3	12.4	33.7	0.0	0.0	-16.4
9/24/2012	0.0	8.0	5.0	0.0	1.0	28.8	6.1	0.0	6.3	12.4	33.7	0.0	0.0	-15.6
9/25/2012	0.0	9.7	5.1	0.0	1.0	28.8	6.1	0.0	6.3	12.4	33.7	0.0	0.0	-14.0
9/26/2012	0.0	4.9	5.1	0.0	1.0	28.8	6.1	0.0	6.3	12.4	33.7	0.0	0.0	-18.8
9/27/2012	0.0	2.9	5.1	0.0	1.0	28.8	6.1	0.0	6.3	12.4	33.7	0.0	0.0	-20.8
9/28/2012	0.0	2.5	5.0	0.0	1.0	28.8	6.1	0.0	6.3	12.4	33.7	0.0	0.0	-21.2
9/29/2012	0.0	6.7	5.0	0.0	1.0	28.8	6.0	0.0	6.3	12.4	33.7	0.0	0.0	-16.9
9/30/2012	0.0	3.8	5.0	0.0	1.0	28.8	6.0	0.0	6.3	12.4	33.7	0.0	0.0	-19.9
10/1/2012	0.0	2.3	5.0	0.0	1.0	28.8	6.1	0.0	6.3	0.0	33.7	0.0	0.0	-8.9
10/2/2012	0.0	3.8	5.0	0.0	1.0	28.8	6.0	0.0	6.3	0.0	33.7	0.0	0.0	-7.4
10/3/2012	0.0	2.9	5.0	0.0	1.0	28.8	6.0	0.0	6.3	0.0	33.7	0.0	0.0	-8.3
10/4/2012	0.0	3.7	5.0	0.0	1.0	28.8	6.1	0.0	6.3	0.0	33.7	0.0	0.0	-7.6
10/5/2012	0.0	4.2	5.0	0.0	1.0	28.8	6.0	0.0	6.3	0.0	33.7	0.0	0.0	-7.0
10/6/2012	0.0	3.2	5.0	0.0	1.0	28.8	6.0	0.0	6.3	0.0	33.7	0.0	0.0	-8.0
10/7/2012	0.0	5.1	5.1	0.0	1.0	28.8	6.1	0.0	6.3	0.0	33.7	0.0	0.0	-6.1
10/8/2012	0.0	2.0	5.0	0.0	1.0	28.8	6.1	0.0	6.3	0.0	33.7	0.0	0.0	-9.2
10/9/2012	0.0	3.4	5.0	0.0	1.0	28.8	6.0	0.0	6.3	0.0	33.7	0.0	0.0	-7.8
10/10/2012	0.0	2.9	5.0	0.0	1.0	28.8	6.1	0.0	6.3	0.0	33.7	0.0	0.0	-8.3
10/11/2012	0.0	5.8	5.0	0.0	1.0	28.8	6.0	0.0	6.3	0.0	33.7	0.0	0.0	-5.4
10/12/2012	0.0	5.2	5.1	0.0	1.0	28.8	6.1	0.0	6.3	0.0	33.7	0.0	0.0	-6.0
10/13/2012	0.0	2.8	5.0	0.0	1.0	28.8	6.0	0.0	6.3	0.0	33.7	0.0	0.0	-8.5
10/14/2012	0.0	3.9	5.0	0.0	1.0	28.8	6.0	0.0	6.3	0.0	33.7	0.0	0.0	-7.3
10/15/2012	0.0	2.8	5.1	0.0	1.0	28.8	6.1	0.0	6.3	0.0	33.7	0.0	0.0	-8.5
10/16/2012	0.0	4.1	5.1	0.0	1.0	28.8	6.1	0.0	6.3	0.0	33.7	0.0	0.0	-7.1

Table F1-1: RGCP Channel Water Budget Equation Analysis Segment 1														
2010-12 Study Period														
(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	MODFLOW Floodplain Recharge	Open Water Channel Evaporation	MODFLOW Riparian Evapo-transpiration	Diversions Authorized (Percha, Arrey, & Leasburg)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
10/17/2012	0.0	1.6	5.1	0.0	1.0	28.8	6.1	0.0	6.3	0.0	33.7	0.0	0.0	-9.6
10/18/2012	0.0	1.9	5.0	0.0	1.0	28.8	6.0	0.0	6.3	0.0	33.7	0.0	0.0	-9.3
10/19/2012	0.0	5.2	5.1	0.0	1.0	28.8	6.1	0.0	6.3	0.0	33.7	0.0	0.0	-6.0
10/20/2012	0.0	2.3	5.0	0.0	1.0	28.8	6.0	0.0	6.3	0.0	33.7	0.0	0.0	-8.9
10/21/2012	0.0	3.0	5.1	0.0	1.0	28.8	6.1	0.0	6.3	0.0	33.7	0.0	0.0	-8.2
10/22/2012	0.0	4.2	5.0	0.0	1.0	28.8	6.0	0.0	6.3	0.0	33.7	0.0	0.0	-7.0
10/23/2012	0.0	6.2	5.1	0.0	1.0	28.8	6.1	0.0	6.3	0.0	33.7	0.0	0.0	-5.0
10/24/2012	0.0	2.6	5.0	0.0	1.0	28.8	6.1	0.0	6.3	0.0	33.7	0.0	0.0	-8.6
10/25/2012	0.0	2.5	5.0	0.0	1.0	28.8	6.0	0.0	6.3	0.0	33.7	0.0	0.0	-8.7
10/26/2012	0.0	2.5	5.0	0.0	1.0	28.8	6.0	0.0	6.3	0.0	33.7	0.0	0.0	-8.7
10/27/2012	0.0	5.0	5.1	0.0	1.0	28.8	6.1	0.0	6.3	0.0	33.7	0.0	0.0	-6.2
10/28/2012	0.0	3.7	5.1	0.0	1.0	28.8	6.1	0.0	6.3	0.0	33.7	0.0	0.0	-7.5
10/29/2012	0.0	1.5	5.0	0.0	1.0	28.8	6.0	0.0	6.3	0.0	33.7	0.0	0.0	-9.7
10/30/2012	0.0	2.8	5.0	0.0	1.0	28.8	6.0	0.0	6.3	0.0	33.7	0.0	0.0	-8.5
10/31/2012	0.0	4.4	5.0	0.0	1.0	28.8	6.1	0.0	6.3	0.0	33.7	0.0	0.0	-6.8
11/1/2012	0.0	2.5	5.0	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	42.6
11/2/2012	0.0	2.4	5.0	0.0	1.0	51.7	6.0	0.0	0.1	0.0	11.5	0.0	0.0	42.6
11/3/2012	0.0	3.1	5.0	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	43.2
11/4/2012	0.0	2.2	5.1	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	42.3
11/5/2012	0.0	0.8	5.0	0.0	1.0	51.7	6.0	0.0	0.1	0.0	11.5	0.0	0.0	40.9
11/6/2012	0.0	0.4	5.1	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	40.5
11/7/2012	0.0	1.2	5.1	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	41.4
11/8/2012	0.0	2.1	5.0	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	42.2
11/9/2012	0.0	0.4	4.9	0.0	1.0	51.7	6.0	0.0	0.1	0.0	11.5	0.0	0.0	40.6
11/10/2012	0.0	0.9	5.1	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	41.0
11/11/2012	0.0	1.0	5.1	0.0	1.0	51.7	6.2	0.0	0.1	0.0	11.5	0.0	0.0	41.1
11/12/2012	0.0	3.8	5.0	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	43.9
11/13/2012	0.0	1.3	5.0	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	41.5
11/14/2012	0.0	2.5	5.0	0.0	1.0	51.7	6.0	0.0	0.1	0.0	11.5	0.0	0.0	42.6
11/15/2012	0.0	1.4	5.0	0.0	1.0	51.7	6.0	0.0	0.1	0.0	11.5	0.0	0.0	41.5
11/16/2012	0.0	2.1	5.1	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	42.3
11/17/2012	0.0	1.6	5.1	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	41.8
11/18/2012	0.0	1.1	5.0	0.0	1.0	51.7	6.0	0.0	0.1	0.0	11.5	0.0	0.0	41.3
11/19/2012	0.0	0.8	5.0	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	40.9
11/20/2012	0.0	0.3	5.0	0.0	1.0	51.7	6.0	0.0	0.1	0.0	11.5	0.0	0.0	40.4
11/21/2012	0.0	0.2	5.1	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	40.3
11/22/2012	0.0	1.1	5.1	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	41.2
11/23/2012	0.0	1.0	5.1	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	41.1
11/24/2012	0.0	3.0	5.1	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	43.1
11/25/2012	0.0	2.4	5.0	0.0	1.0	51.7	6.0	0.0	0.1	0.0	11.5	0.0	0.0	42.6
11/26/2012	0.0	1.3	5.0	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	41.5
11/27/2012	0.0	1.1	5.1	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	41.3
11/28/2012	0.0	2.2	5.0	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	42.4
11/29/2012	0.0	2.0	5.1	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	42.2
11/30/2012	0.0	1.1	5.1	0.0	1.0	51.7	6.1	0.0	0.1	0.0	11.5	0.0	0.0	41.2

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

$$\Delta Sic = (Qus + Pc + Qcin + Qirf + Qgwrf) - (Qcds + Qcs + Qfpr + ET + Qda + Qdu)$$

- Sum of Inflow
- Sum of Outflow
- $\Delta Sic$  - Change in Channel Storage

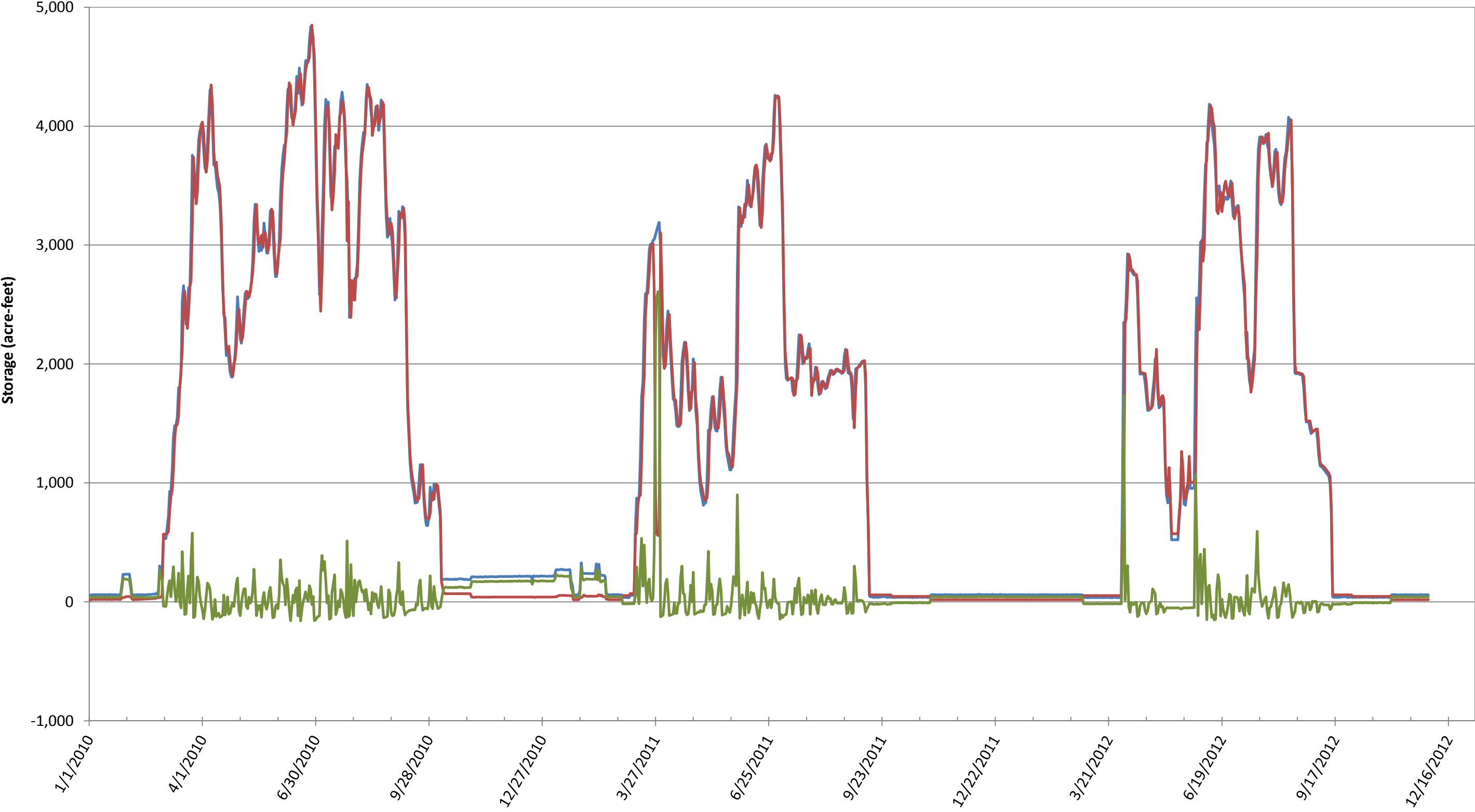




Table F1-2: RGCP Channel Water Budget Equation Analysis Segment 22010-12 Study Period(Units - Acre-Feet)

	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	MODFLOW Groundwater Return Flow	Downstream Channel Outflow, below Mesilla Dam	Channel Seepage	MODFLOW Floodplain Recharge	Open Water Channel Evaporation	MODFLOW Riparian Evapo-transpiration	Diversions Authorized (Del Rio, Eastside, & Westside)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
1/1/2010	0.0	1.4	0.0	11.4	44.5	6.5	0.0	0.0	0.1	0.0	1.4	0.0	0.0	62.4
1/2/2010	3.0	1.2	0.0	11.6	44.5	6.5	0.0	3.0	0.1	0.0	1.4	0.0	0.0	62.3
1/3/2010	5.2	0.5	0.0	11.7	44.5	6.5	11.1	5.2	0.1	0.0	1.4	0.0	0.0	50.6
1/4/2010	6.5	1.3	0.0	11.6	44.5	6.5	28.2	6.5	0.1	0.0	1.4	0.0	0.0	34.2
1/5/2010	6.5	0.5	0.0	11.6	44.5	6.5	28.9	6.5	0.1	0.0	1.4	0.0	0.0	32.7
1/6/2010	6.5	1.6	0.0	11.7	44.5	6.5	28.7	6.5	0.1	0.0	1.4	0.0	0.0	34.1
1/7/2010	6.5	1.9	0.0	11.6	44.5	6.5	28.8	6.5	0.1	0.0	1.4	0.0	0.0	34.2
1/8/2010	6.5	1.2	0.0	11.3	44.5	6.5	28.8	6.5	0.1	0.0	1.4	0.0	0.0	33.3
1/9/2010	6.5	1.2	0.0	11.3	44.5	6.5	28.5	6.5	0.1	0.0	1.4	0.0	0.0	33.5
1/10/2010	6.6	0.9	0.0	11.5	44.5	6.5	28.6	6.6	0.1	0.0	1.4	0.0	0.0	33.2
1/11/2010	6.5	2.0	0.0	11.5	44.5	6.5	28.6	6.5	0.1	0.0	1.4	0.0	0.0	34.4
1/12/2010	6.5	0.7	0.0	12.0	44.5	6.5	28.8	6.5	0.1	0.0	1.4	0.0	0.0	33.4
1/13/2010	6.5	2.2	0.0	12.4	44.5	6.5	29.2	6.5	0.1	0.0	1.4	0.0	0.0	34.9
1/14/2010	6.5	0.3	0.0	12.5	44.5	6.5	29.4	6.5	0.1	0.0	1.4	0.0	0.0	32.9
1/15/2010	6.4	1.1	0.0	12.4	44.5	6.5	29.5	6.4	0.1	0.0	1.4	0.0	0.0	33.5
1/16/2010	6.5	0.2	0.0	12.3	44.5	6.5	29.3	6.5	0.1	0.0	1.4	0.0	0.0	32.7
1/17/2010	6.5	0.4	0.0	12.4	44.5	6.5	29.4	6.5	0.1	0.0	1.4	0.0	0.0	33.0
1/18/2010	6.5	1.6	0.0	12.2	44.5	6.5	29.4	6.5	0.1	0.0	1.4	0.0	0.0	34.0
1/19/2010	6.4	1.2	0.0	12.3	44.5	6.5	29.2	6.4	0.1	0.0	1.4	0.0	0.0	33.7
1/20/2010	6.5	1.4	0.0	12.3	44.5	6.5	29.2	6.5	0.1	0.0	1.4	0.0	0.0	33.9
1/21/2010	6.4	1.0	0.0	12.2	44.5	6.5	29.1	6.4	0.1	0.0	1.4	0.0	0.0	33.6
1/22/2010	6.5	1.2	0.0	12.6	44.5	6.5	29.1	6.5	0.1	0.0	1.4	0.0	0.0	34.2
1/23/2010	6.5	0.1	0.0	12.7	44.5	6.5	29.5	6.5	0.1	0.0	1.4	0.0	0.0	32.8
1/24/2010	6.4	1.3	0.0	12.0	44.5	6.5	29.4	6.4	0.1	0.0	1.4	0.0	0.0	33.4
1/25/2010	6.3	1.2	0.0	10.7	44.5	6.5	28.6	6.3	0.1	0.0	1.4	0.0	0.0	32.8
1/26/2010	6.4	0.5	0.0	9.9	44.5	6.5	27.5	6.4	0.1	0.0	1.4	0.0	0.0	32.4
1/27/2010	6.5	0.9	0.0	10.2	44.5	6.5	27.1	6.5	0.1	0.0	1.4	0.0	0.0	33.6
1/28/2010	6.5	0.6	0.0	11.4	44.5	6.5	27.5	6.5	0.1	0.0	1.4	0.0	0.0	34.0
1/29/2010	6.1	0.3	0.0	10.7	44.5	6.5	28.2	6.1	0.1	0.0	1.4	0.0	0.0	32.4
1/30/2010	10.1	0.7	0.0	10.1	44.5	6.5	27.3	10.1	0.1	0.0	1.4	0.0	0.0	33.0
1/31/2010	13.0	1.2	0.0	10.3	44.5	6.5	29.4	13.0	0.1	0.0	1.4	0.0	0.0	31.5
2/1/2010	13.1	0.6	0.0	10.3	44.5	6.5	32.8	13.1	0.1	0.0	1.4	0.0	0.0	27.6
2/2/2010	13.2	0.3	0.0	10.3	44.5	6.5	33.1	13.2	0.1	0.0	1.4	0.0	0.0	26.9
2/3/2010	13.3	1.0	0.0	10.5	44.5	6.5	33.3	13.3	0.1	0.0	1.4	0.0	0.0	27.8
2/4/2010	13.0	1.2	0.0	11.0	44.5	6.5	33.7	13.0	0.1	0.0	1.4	0.0	0.0	28.0
2/5/2010	3.8	1.6	0.0	10.5	44.5	6.5	33.5	3.8	0.1	0.0	1.4	0.0	0.0	28.1
2/6/2010	6.2	1.0	0.0	10.3	44.5	6.5	25.6	6.2	0.1	0.0	1.4	0.0	0.0	35.3
2/7/2010	6.4	1.1	0.0	10.3	44.5	6.5	27.3	6.4	0.1	0.0	1.4	0.0	0.0	33.6
2/8/2010	6.5	0.9	0.0	10.4	44.5	6.5	27.6	6.5	0.1	0.0	1.4	0.0	0.0	33.2
2/9/2010	6.4	1.4	0.0	10.2	44.5	6.5	27.6	6.4	0.1	0.0	1.4	0.0	0.0	33.5
2/10/2010	6.5	0.3	0.0	6.2	44.5	6.5	26.6	6.5	0.1	0.0	1.4	0.0	0.0	29.5
2/11/2010	6.5	0.5	0.0	6.6	44.5	6.5	24.1	6.5	0.1	0.0	1.4	0.0	0.0	32.6
2/12/2010	6.5	3.1	0.0	6.7	44.5	6.5	24.4	6.5	0.1	0.0	1.4	0.0	0.0	34.9
2/13/2010	6.4	0.8	0.0	8.8	44.5	6.5	25.1	6.4	0.1	0.0	1.4	0.0	0.0	34.1
2/14/2010	6.4	1.6	0.0	10.0	44.5	6.5	26.9	6.4	0.1	0.0	1.4	0.0	0.0	34.1
2/15/2010	6.5	0.6	0.0	0.0	44.5	6.5	24.8	6.5	0.1	0.0	1.4	0.0	0.0	25.3

Table F1-2: RGCP Channel Water Budget Equation Analysis Segment 2

2010-12 Study Period

(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	MODFLOW Groundwater Return Flow	Downstream Channel Outflow, below Mesilla Dam	Channel Seepage	MODFLOW Floodplain Recharge	Open Water Channel Evaporation	MODFLOW Riparian Evapo-transpiration	Diversions Authorized (Del Rio, Eastside, & Westside)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
2/16/2010	6.3	1.0	0.0	10.2	44.5	6.5	20.9	6.3	0.1	0.0	1.4	0.0	0.0	39.8
2/17/2010	6.4	1.3	0.0	9.0	44.5	6.5	27.5	6.4	0.1	0.0	1.4	0.0	0.0	32.4
2/18/2010	6.3	0.3	0.0	8.8	44.5	6.5	26.8	6.3	0.1	0.0	1.4	0.0	0.0	31.9
2/19/2010	6.4	0.6	0.0	12.1	44.5	6.5	27.6	6.4	0.1	0.0	1.4	0.0	0.0	34.7
2/20/2010	6.4	0.8	0.0	13.5	44.5	6.5	30.1	6.4	0.1	0.0	1.4	0.0	0.0	33.8
2/21/2010	6.5	2.2	0.0	13.3	44.5	6.5	30.9	6.5	0.1	0.0	1.4	0.0	0.0	34.1
2/22/2010	6.4	0.9	0.0	13.3	44.5	6.5	30.8	6.4	0.1	0.0	1.4	0.0	0.0	32.9
2/23/2010	6.4	0.1	0.0	13.2	44.5	6.5	30.9	6.4	0.1	0.0	1.4	0.0	0.0	32.0
2/24/2010	6.4	2.6	0.0	12.5	44.5	6.5	30.7	6.4	0.1	0.0	1.4	0.0	0.0	34.0
2/25/2010	6.5	0.5	0.0	12.8	44.5	6.5	30.4	6.5	0.1	0.0	1.4	0.0	0.0	32.5
2/26/2010	6.4	0.4	0.0	12.8	44.5	6.5	30.6	6.4	0.1	0.0	1.4	0.0	0.0	32.1
2/27/2010	6.5	0.1	0.0	12.9	44.5	6.5	30.7	6.5	0.1	0.0	1.4	0.0	0.0	31.8
2/28/2010	19.5	0.2	0.0	13.0	44.5	6.5	30.8	19.5	0.1	0.0	1.4	0.0	0.0	31.9
3/1/2010	502.9	1.6	0.0	12.4	44.5	3.0	455.3	69.4	6.3	2.8	8.9	0.0	0.0	21.7
3/2/2010	501.4	1.1	0.0	11.7	44.5	3.0	454.3	68.8	6.3	2.8	8.9	0.0	0.0	20.6
3/3/2010	501.8	1.2	0.0	11.7	44.5	3.0	452.2	68.7	6.3	2.8	8.9	0.0	0.0	23.4
3/4/2010	502.3	0.8	0.0	11.6	44.5	3.0	452.7	68.8	6.3	2.8	8.9	0.0	0.0	22.8
3/5/2010	507.3	0.2	0.0	11.6	44.5	3.0	452.9	69.0	6.3	2.8	8.9	0.0	0.0	26.8
3/6/2010	659.8	0.2	0.0	11.5	44.5	3.0	458.0	81.4	6.3	2.8	8.9	0.0	0.0	161.6
3/7/2010	788.7	0.6	0.0	11.9	44.5	3.0	596.1	95.5	6.3	2.8	8.9	0.0	0.0	139.3
3/8/2010	839.4	0.4	0.0	12.0	44.5	3.0	733.7	107.3	6.3	2.8	8.9	0.0	0.0	40.4
3/9/2010	991.6	0.1	0.0	12.0	44.5	3.0	761.8	115.7	6.3	2.8	8.9	0.0	0.0	155.8
3/10/2010	1259.2	0.9	0.0	12.1	44.5	3.0	786.8	137.6	6.3	2.8	8.9	184.5	1.8	192.9
3/11/2010	1364.7	1.2	0.0	12.1	44.5	3.0	915.2	149.8	6.3	2.8	8.9	275.7	2.8	66.8
3/12/2010	1372.1	1.1	0.0	11.9	44.5	3.0	961.4	151.9	6.3	2.8	8.9	277.7	2.8	23.7
3/13/2010	1437.7	0.4	0.0	12.0	44.5	3.0	978.4	155.3	6.3	2.8	8.9	281.7	2.8	64.4
3/14/2010	1670.6	0.4	0.0	12.2	44.5	3.0	1114.9	170.0	6.3	2.8	8.9	277.7	2.8	150.2
3/15/2010	1672.7	0.9	0.0	12.2	44.5	3.0	1238.5	173.7	6.3	2.8	8.9	285.6	2.9	17.6
3/16/2010	1650.1	0.0	0.0	12.2	44.5	3.0	1205.2	171.2	6.3	2.8	8.9	293.6	2.9	21.9
3/17/2010	2072.5	0.1	0.0	12.5	44.5	3.0	1400.6	194.7	6.3	2.8	8.9	295.5	3.0	223.8
3/18/2010	2194.1	0.9	0.0	13.1	44.5	3.0	1678.6	206.6	6.3	2.8	8.9	293.6	2.9	58.9
3/19/2010	2024.7	0.3	0.0	12.2	44.5	3.0	1631.1	198.7	6.3	2.8	8.9	295.5	3.0	-58.6
3/20/2010	1885.5	0.8	0.0	10.8	44.5	3.0	1477.7	188.7	6.3	2.8	8.9	293.6	2.9	-33.3
3/21/2010	2009.9	0.0	0.0	10.1	44.5	3.0	1472.3	193.4	6.3	2.8	8.9	293.6	2.9	90.3
3/22/2010	2219.6	0.3	0.0	10.9	44.5	3.0	1530.6	206.7	6.3	2.8	8.9	420.5	4.2	102.5
3/23/2010	2253.7	0.1	0.0	11.5	44.5	3.0	1522.9	208.5	6.3	2.8	8.9	505.8	5.1	57.6
3/24/2010	2498.6	0.1	0.0	11.3	44.5	3.0	1578.7	220.9	6.3	2.8	8.9	591.1	5.9	146.9
3/25/2010	2941.7	0.0	0.0	11.1	44.5	3.0	1714.5	248.4	6.3	2.8	8.9	906.4	9.1	110.1
3/26/2010	2770.7	0.1	0.0	11.1	44.5	3.0	1598.4	241.4	6.3	2.8	8.9	1025.5	10.3	-56.8
3/27/2010	2634.6	1.5	0.0	11.0	44.5	3.0	1459.4	232.8	6.3	2.8	8.9	1001.7	10.0	-20.3
3/28/2010	2721.8	0.7	0.0	0.0	44.5	3.0	1436.2	235.3	6.3	2.8	8.9	1011.6	10.1	65.7
3/29/2010	2952.9	0.3	0.0	13.0	44.5	3.0	1630.4	247.7	6.3	2.8	8.9	1001.7	10.0	112.8
3/30/2010	3060.1	0.0	0.0	13.2	44.5	3.0	1803.9	254.8	6.3	2.8	8.9	991.7	9.9	48.4
3/31/2010	3059.4	0.1	0.0	13.6	44.5	3.0	1752.3	255.6	6.3	2.8	8.9	1086.9	10.9	3.5
4/1/2010	2992.3	0.1	0.0	13.6	44.5	3.0	1590.5	252.5	6.3	6.1	8.9	1209.9	12.1	-25.4
4/2/2010	2878.5	0.7	0.0	13.8	44.5	3.0	1367.7	247.2	6.3	6.1	8.9	1352.7	13.5	-53.2
4/3/2010	2741.9	0.6	0.0	14.7	44.5	3.0	1287.8	239.1	6.3	6.1	8.9	1283.3	12.8	-31.2
4/4/2010	2703.7	0.7	0.0	20.2	44.5	3.0	1293.6	236.2	6.3	6.1	8.9	1206.0	12.1	10.7
4/5/2010	2779.1	1.1	0.0	17.5	44.5	3.0	1333.0	239.1	6.3	6.1	8.9	1190.1	11.9	57.5
4/6/2010	2934.5	1.2	0.0	28.3	44.5	3.0	1417.2	247.6	6.3	6.1	8.9	1243.6	12.4	77.2
4/7/2010	3088.0	0.2	0.0	20.1	44.5	3.0	1484.6	255.8	6.3	6.1	8.9	1325.0	13.2	64.5

Table F1-2: RGCP Channel Water Budget Equation Analysis Segment 2

2010-12 Study Period

(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	MODFLOW Groundwater Return Flow	Downstream Channel Outflow, below Mesilla Dam	Channel Seepage	MODFLOW Floodplain Recharge	Open Water Channel Evaporation	MODFLOW Riparian Evapo- transpiration	Diversions Authorized (Del Rio, Eastside, & Westside)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
4/8/2010	3154.2	0.1	0.0	20.2	44.5	3.0	1528.1	260.3	6.3	6.1	8.9	1386.4	13.9	20.7
4/9/2010	3056.7	0.0	0.0	22.1	44.5	3.0	1376.3	257.5	6.3	6.1	8.9	1531.2	15.3	-65.4
4/10/2010	2814.9	0.0	0.0	25.2	44.5	3.0	1139.2	244.2	6.3	6.1	8.9	1557.0	15.6	-79.1
4/11/2010	2710.6	0.9	0.0	26.3	44.5	3.0	1107.5	237.3	6.3	6.1	8.9	1428.1	14.3	-13.9
4/12/2010	2726.1	1.1	0.0	27.9	44.5	3.0	1107.7	238.4	6.3	6.1	8.9	1426.1	14.3	4.3
4/13/2010	2569.8	0.2	0.0	34.7	44.5	3.0	1111.5	230.9	6.3	6.1	8.9	1332.9	13.3	-49.4
4/14/2010	2456.0	0.1	0.0	33.0	44.5	3.0	1161.2	223.8	6.3	6.1	8.9	1154.4	11.5	-29.1
4/15/2010	2322.9	1.4	0.0	30.4	44.5	3.0	1141.0	216.6	6.3	6.1	8.9	1065.1	10.7	-47.0
4/16/2010	2111.8	0.3	0.0	30.1	44.5	3.0	987.4	205.8	6.3	6.1	8.9	1075.0	10.8	-105.3
4/17/2010	1722.8	0.2	0.0	30.5	44.5	3.0	607.5	182.6	6.3	6.1	8.9	1176.2	11.8	-192.1
4/18/2010	1518.9	0.2	0.0	38.8	44.5	3.0	529.2	165.6	6.3	6.1	8.9	950.1	9.5	-65.8
4/19/2010	1593.5	0.2	0.0	35.7	44.5	3.0	455.4	168.3	6.3	6.1	8.9	983.8	9.8	43.5
4/20/2010	1395.7	0.1	0.0	35.5	44.5	3.0	471.5	157.5	6.3	6.1	8.9	918.3	9.2	-94.4
4/21/2010	1350.2	0.1	0.0	36.3	44.5	3.0	409.8	151.5	6.3	6.1	8.9	850.9	8.5	-3.9
4/22/2010	1404.1	1.0	0.0	39.9	44.5	3.0	394.1	154.7	6.3	6.1	8.9	874.7	8.7	43.6
4/23/2010	1295.3	0.7	0.0	38.8	44.5	3.0	442.3	149.1	6.3	6.1	8.9	815.2	8.2	-49.8
4/24/2010	1315.6	0.7	0.0	37.1	44.5	3.0	453.0	147.9	6.3	6.1	8.9	735.9	7.4	39.7
4/25/2010	1330.6	0.4	0.0	36.5	44.5	3.0	557.7	149.3	6.3	6.1	8.9	652.6	6.5	31.4
4/26/2010	1340.4	0.3	0.0	68.0	44.5	3.0	590.0	151.4	6.3	6.1	8.9	656.5	6.6	34.4
4/27/2010	1320.4	0.7	0.0	56.3	44.5	3.0	591.9	150.0	6.3	6.1	8.9	656.5	6.6	2.6
4/28/2010	1370.6	0.1	0.0	41.8	44.5	3.0	568.4	151.7	6.3	6.1	8.9	672.4	6.7	43.4
4/29/2010	1463.4	0.1	0.0	51.3	44.5	3.0	633.0	158.2	6.3	6.1	8.9	670.4	6.7	75.8
4/30/2010	1641.0	0.4	0.0	50.0	44.5	3.0	630.8	170.5	6.3	6.1	8.9	817.2	8.2	95.2
5/1/2010	1575.4	0.1	0.0	51.7	44.5	3.0	737.8	169.3	6.3	9.6	8.9	763.6	7.6	-24.6
5/2/2010	1440.2	1.8	0.0	51.0	44.5	3.0	659.2	160.3	6.3	9.6	8.9	749.8	7.5	-57.3
5/3/2010	1440.2	1.4	0.0	54.6	44.5	3.0	608.2	158.2	6.3	9.6	8.9	727.9	7.3	20.6
5/4/2010	1529.5	0.3	0.0	44.6	44.5	3.0	625.2	162.9	6.3	9.6	8.9	743.8	7.4	61.3
5/5/2010	1662.7	0.5	0.0	44.4	44.5	3.0	756.3	171.6	6.3	9.6	8.9	710.1	7.1	88.4
5/6/2010	1793.2	0.4	0.0	46.6	44.5	3.0	828.2	181.2	6.3	9.6	8.9	779.5	7.8	70.2
5/7/2010	1771.3	1.2	0.0	42.7	44.5	3.0	779.6	181.5	6.3	9.6	8.9	880.7	8.8	-7.6
5/8/2010	1714.9	0.0	0.0	49.4	44.5	3.0	719.4	178.0	6.3	9.6	8.9	898.5	9.0	-12.8
5/9/2010	1750.1	0.0	0.0	46.6	44.5	3.0	694.2	179.5	6.3	9.6	8.9	916.4	9.2	25.1
5/10/2010	1767.5	0.0	0.0	50.7	44.5	3.0	719.1	180.7	6.3	9.6	8.9	914.4	9.1	22.6
5/11/2010	1781.3	0.6	0.0	50.3	44.5	3.0	714.0	181.4	6.3	9.6	8.9	934.2	9.3	21.1
5/12/2010	1905.5	0.0	0.0	53.2	44.5	3.0	738.5	187.7	6.3	9.6	8.9	966.0	9.7	84.7
5/13/2010	2159.8	0.1	0.0	48.8	44.5	3.0	911.6	203.6	6.3	9.6	8.9	993.7	9.9	117.4
5/14/2010	2248.8	1.0	0.0	50.0	44.5	3.0	905.1	211.2	6.3	9.6	8.9	1176.2	11.8	24.9
5/15/2010	2118.3	1.2	0.0	50.6	44.5	3.0	952.8	204.5	6.3	9.6	8.9	1069.1	10.7	-39.2
5/16/2010	2141.5	1.8	0.0	49.4	44.5	3.0	1071.0	204.6	6.3	9.6	8.9	906.4	9.1	28.4
5/17/2010	2114.8	0.4	0.0	51.5	44.5	3.0	1098.9	203.4	6.3	9.6	8.9	880.7	8.8	1.7
5/18/2010	2026.6	0.5	0.0	50.4	44.5	3.0	1032.4	199.6	6.3	9.6	8.9	910.4	9.1	-47.4
5/19/2010	1821.9	0.0	0.0	50.3	44.5	3.0	865.8	186.6	6.3	9.6	8.9	916.4	9.2	-79.2
5/20/2010	1868.0	0.4	0.0	48.4	44.5	3.0	690.4	186.8	6.3	9.6	8.9	1027.4	10.3	29.2
5/21/2010	1946.5	1.6	0.0	47.8	44.5	3.0	618.7	192.0	6.3	9.6	8.9	1170.2	11.7	31.8
5/22/2010	2002.9	0.2	0.0	48.9	44.5	3.0	738.0	195.6	6.3	9.6	8.9	1096.9	11.0	39.3
5/23/2010	1976.5	1.3	0.0	50.3	44.5	3.0	907.0	194.7	6.3	9.6	8.9	936.2	9.4	8.1
5/24/2010	1999.3	0.3	0.0	50.6	44.5	3.0	861.0	195.3	6.3	9.6	8.9	987.8	9.9	24.1
5/25/2010	2115.2	1.6	0.0	50.7	44.5	3.0	935.8	201.6	6.3	9.6	8.9	977.9	9.8	70.3
5/26/2010	2224.0	0.2	0.0	56.0	44.5	3.0	983.0	209.3	6.3	9.6	8.9	1059.2	10.6	46.4
5/27/2010	2248.9	0.9	0.0	50.4	44.5	3.0	1070.1	211.6	6.3	9.6	8.9	1027.4	10.3	9.0
5/28/2010	2086.4	1.0	0.0	49.0	44.5	3.0	993.8	203.5	6.3	9.6	8.9	1027.4	10.3	-70.2

Table F1-2: RGCP Channel Water Budget Equation Analysis Segment 2

2010-12 Study Period

(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	MODFLOW Groundwater Return Flow	Downstream Channel Outflow, below Mesilla Dam	Channel Seepage	MODFLOW Floodplain Recharge	Open Water Channel Evaporation	MODFLOW Riparian Evapo-transpiration	Diversions Authorized (Del Rio, Eastside, & Westside)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
5/29/2010	1934.7	0.5	0.0	48.7	44.5	3.0	894.1	193.2	6.3	9.6	8.9	967.9	9.7	-53.2
5/30/2010	1890.8	0.0	0.0	50.8	44.5	3.0	831.4	189.6	6.3	9.6	8.9	950.1	9.5	-11.4
5/31/2010	1892.6	1.2	0.0	49.9	44.5	3.0	801.8	189.3	6.3	9.6	8.9	964.0	9.6	6.8
6/1/2010	1849.4	0.6	0.0	50.4	44.5	3.0	752.4	186.4	6.3	9.9	8.9	987.8	9.9	-8.4
6/2/2010	1978.2	0.4	0.0	51.5	44.5	3.0	711.0	191.5	6.3	9.9	8.9	1055.2	10.6	90.3
6/3/2010	2259.6	1.0	0.0	48.7	44.5	3.0	966.5	209.2	6.3	9.9	8.9	1025.5	10.3	124.9
6/4/2010	2459.9	0.4	0.0	50.2	44.5	3.0	1039.4	221.5	6.3	9.9	8.9	1182.1	11.8	83.8
6/5/2010	2667.4	0.3	0.0	50.9	44.5	3.0	1192.0	233.2	6.3	9.9	8.9	1217.9	12.2	91.9
6/6/2010	2797.3	1.1	0.0	51.4	44.5	3.0	1410.4	241.7	6.3	9.9	8.9	1166.3	11.7	47.7
6/7/2010	2824.4	2.5	0.0	56.9	44.5	3.0	1505.0	242.6	6.3	9.9	8.9	1108.8	11.1	43.8
6/8/2010	3095.9	1.2	0.0	58.6	44.5	3.0	1630.4	256.1	6.3	9.9	8.9	1180.2	11.8	105.8
6/9/2010	3209.9	0.3	0.0	53.9	44.5	3.0	1763.5	263.7	6.3	9.9	8.9	1225.8	12.3	28.1
6/10/2010	3114.4	3.5	0.0	48.6	44.5	3.0	1759.6	260.1	6.3	9.9	8.9	1206.0	12.1	-42.2
6/11/2010	2933.6	0.7	0.0	56.0	44.5	3.0	1654.7	250.5	6.3	9.9	8.9	1152.4	11.5	-50.6
6/12/2010	2898.0	0.9	0.0	56.8	44.5	3.0	1519.9	247.3	6.3	9.9	8.9	1204.0	12.0	1.1
6/13/2010	3042.9	0.2	0.0	56.3	44.5	3.0	1708.7	254.1	6.3	9.9	8.9	1090.9	10.9	63.1
6/14/2010	3112.4	1.9	0.0	55.8	44.5	3.0	1785.1	257.5	6.3	9.9	8.9	1096.9	11.0	48.4
6/15/2010	3150.1	3.2	0.0	57.8	44.5	3.0	1850.4	260.4	6.3	9.9	8.9	1090.9	10.9	26.1
6/16/2010	3217.1	1.8	0.0	57.0	44.5	3.0	1924.6	265.2	6.3	9.9	8.9	1096.9	11.0	5.7
6/17/2010	3142.0	2.5	0.0	54.8	44.5	3.0	1824.0	259.9	6.3	9.9	8.9	1120.7	11.2	11.2
6/18/2010	3293.5	4.5	0.0	54.6	44.5	3.0	1815.9	268.8	6.3	9.9	8.9	1265.5	12.7	18.9
6/19/2010	3192.9	1.4	0.0	54.3	44.5	3.0	1714.5	263.5	6.3	9.9	8.9	1311.1	13.1	-23.4
6/20/2010	3167.8	1.5	0.0	54.8	44.5	3.0	1612.2	261.7	6.3	9.9	8.9	1366.6	13.7	0.9
6/21/2010	3183.8	0.7	0.0	57.6	44.5	3.0	1599.1	262.2	6.3	9.9	8.9	1382.5	13.8	15.5
6/22/2010	3222.6	0.4	0.0	56.4	44.5	3.0	1571.0	263.9	6.3	9.9	8.9	1438.0	14.4	23.6
6/23/2010	3308.8	1.5	0.0	58.1	44.5	3.0	1636.6	268.3	6.3	9.9	8.9	1446.0	14.5	34.6
6/24/2010	3298.8	1.8	0.0	61.3	44.5	3.0	1620.1	268.5	6.3	9.9	8.9	1493.6	14.9	-3.9
6/25/2010	3323.4	1.0	0.0	60.5	44.5	3.0	1601.8	268.6	6.3	9.9	8.9	1499.5	15.0	31.2
6/26/2010	3480.4	0.9	0.0	61.3	44.5	3.0	1781.5	276.2	6.3	9.9	8.9	1436.0	14.4	64.8
6/27/2010	3568.8	3.7	0.0	64.2	44.5	3.0	1940.8	281.8	6.3	9.9	8.9	1404.3	14.0	25.8
6/28/2010	3584.3	2.6	0.0	65.9	44.5	3.0	1968.9	282.2	6.3	9.9	8.9	1394.4	13.9	23.5
6/29/2010	3532.4	4.7	0.0	72.5	44.5	3.0	2043.7	283.3	6.3	9.9	8.9	1374.5	13.7	-75.9
6/30/2010	3065.4	2.8	0.0	69.7	44.5	3.0	1611.0	261.0	6.3	9.9	8.9	1483.6	14.8	-201.0
7/1/2010	2587.1	1.5	0.0	68.3	44.5	3.0	1316.9	233.1	6.3	7.3	8.9	1277.4	12.8	-150.0
7/2/2010	2389.2	4.9	0.0	67.6	44.5	3.0	1258.7	221.3	6.3	7.3	8.9	1085.0	10.8	-82.5
7/3/2010	1968.6	1.2	0.0	69.9	44.5	3.0	1153.6	197.1	6.3	7.3	8.9	874.7	8.7	-164.8
7/4/2010	1747.3	2.1	0.0	69.3	44.5	3.0	1098.6	179.0	6.3	7.3	8.9	618.8	6.2	-56.4
7/5/2010	2067.6	4.9	0.0	68.7	44.5	3.0	1162.0	193.3	6.3	7.3	8.9	620.8	6.2	186.7
7/6/2010	2435.7	1.3	0.0	67.1	44.5	3.0	1478.4	216.4	6.3	7.3	8.9	666.4	6.7	163.9
7/7/2010	2740.6	1.8	0.0	65.5	44.5	3.0	1642.7	233.6	6.3	7.3	8.9	811.2	8.1	141.2
7/8/2010	3045.8	2.2	0.0	63.2	44.5	3.0	1867.5	250.9	6.3	7.3	8.9	890.6	8.9	122.3
7/9/2010	3177.1	6.2	0.0	65.2	44.5	3.0	1700.9	259.6	6.3	7.3	8.9	1277.4	12.8	30.4
7/10/2010	3138.8	4.8	0.0	67.5	44.5	3.0	1605.1	257.8	6.3	7.3	8.9	1368.6	13.7	-1.1
7/11/2010	3186.2	3.0	0.0	72.6	44.5	3.0	1729.7	261.3	6.3	7.3	8.9	1295.2	13.0	-4.6
7/12/2010	2885.1	1.8	0.0	76.2	44.5	3.0	1659.9	247.5	6.3	7.3	8.9	1180.2	11.8	-104.4
7/13/2010	2618.7	2.1	0.0	76.4	44.5	3.0	1459.8	231.3	6.3	7.3	8.9	1088.9	10.9	-62.8
7/14/2010	2686.7	1.6	0.0	75.1	44.5	3.0	1525.9	232.8	6.3	7.3	8.9	971.9	9.7	52.5
7/15/2010	2794.3	3.5	0.0	72.6	44.5	3.0	1476.5	238.4	6.3	7.3	8.9	1118.7	11.2	55.6
7/16/2010	2955.1	2.0	0.0	71.7	44.5	3.0	1423.4	248.7	6.3	7.3	8.9	1350.7	13.5	24.3
7/17/2010	2919.3	6.5	0.0	71.3	44.5	3.0	1366.3	246.5	6.3	7.3	8.9	1402.3	14.0	1.3
7/18/2010	2880.8	1.9	0.0	69.8	44.5	3.0	1417.4	244.2	6.3	7.3	8.9	1307.1	13.1	3.2



Table F1-2: RGCP Channel Water Budget Equation Analysis Segment 2

2010-12 Study Period

(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	MODFLOW Groundwater Return Flow	Downstream Channel Outflow, below Mesilla Dam	Channel Seepage	MODFLOW Floodplain Recharge	Open Water Channel Evaporation	MODFLOW Riparian Evapo-transpiration	Diversions Authorized (Del Rio, Eastside, & Westside)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
7/19/2010	2891.6	2.7	0.0	69.5	44.5	3.0	1411.2	244.5	6.3	7.3	8.9	1321.0	13.2	6.7
7/20/2010	2891.5	2.6	0.0	70.0	44.5	3.0	1416.4	243.4	6.3	7.3	8.9	1297.2	13.0	27.0
7/21/2010	3017.0	5.0	0.0	72.4	44.5	3.0	1536.4	249.5	6.3	7.3	8.9	1263.5	12.6	65.0
7/22/2010	3097.2	2.1	0.0	72.7	44.5	3.0	1455.1	254.0	6.3	7.3	8.9	1455.9	14.6	27.0
7/23/2010	3102.5	4.7	0.0	68.9	44.5	3.0	1369.8	253.4	6.3	7.3	8.9	1576.9	15.8	-3.8
7/24/2010	2987.9	1.6	0.0	67.8	44.5	3.0	1464.8	250.5	6.3	7.3	8.9	1449.9	14.5	-87.0
7/25/2010	2477.9	2.0	0.0	68.2	44.5	3.0	1215.4	219.4	6.3	7.3	8.9	1221.8	12.2	-87.4
7/26/2010	2956.8	4.7	0.0	79.2	44.5	3.0	1630.7	247.9	6.3	7.3	8.9	1106.8	11.1	78.0
7/27/2010	2158.7	2.0	40.5	89.9	44.5	3.0	1490.6	207.5	6.3	7.3	8.9	843.0	8.4	-226.9
7/28/2010	2017.0	3.3	0.0	87.2	44.5	3.0	1159.4	192.4	6.3	7.3	8.9	797.4	8.0	-19.0
7/29/2010	2325.4	6.9	0.0	71.9	44.5	3.0	1229.8	208.4	6.3	7.3	8.9	856.9	8.6	132.0
7/30/2010	2287.7	2.9	0.0	70.4	44.5	3.0	1287.3	209.1	6.3	7.3	8.9	902.5	9.0	-15.0
7/31/2010	2175.9	1.2	0.0	70.8	44.5	3.0	1130.3	201.4	6.3	7.3	8.9	958.0	9.6	-18.8
8/1/2010	2362.0	6.9	0.0	75.1	44.5	3.0	1188.5	211.3	6.3	6.9	8.9	975.9	9.8	91.8
8/2/2010	2377.6	6.6	0.0	77.0	44.5	3.0	1287.5	213.5	6.3	6.9	8.9	948.1	9.5	35.7
8/3/2010	2422.4	4.8	0.0	72.8	44.5	3.0	1270.9	217.1	6.3	6.9	8.9	997.7	10.0	36.9
8/4/2010	2579.4	1.9	0.0	72.0	44.5	3.0	1260.2	224.5	6.3	6.9	8.9	1110.7	11.1	80.0
8/5/2010	2667.7	4.2	0.0	69.1	44.5	3.0	1306.1	230.6	6.3	6.9	8.9	1184.1	11.8	41.1
8/6/2010	2714.6	3.7	0.0	65.2	44.5	3.0	1220.4	233.3	6.3	6.9	8.9	1328.9	13.3	21.2
8/7/2010	2816.1	4.7	0.0	64.3	44.5	3.0	1277.4	237.7	6.3	6.9	8.9	1332.9	13.3	57.3
8/8/2010	2921.5	1.4	0.0	76.4	44.5	3.0	1418.7	244.0	6.3	6.9	8.9	1307.1	13.1	49.8
8/9/2010	2942.4	5.1	0.0	77.4	44.5	3.0	1447.2	245.2	6.3	6.9	8.9	1323.0	13.2	29.8
8/10/2010	3094.0	3.6	0.0	92.6	44.5	3.0	1516.8	253.9	6.3	6.9	8.9	1372.6	13.7	67.8
8/11/2010	3117.8	5.1	0.0	80.1	44.5	3.0	1576.3	257.2	6.3	6.9	8.9	1382.5	13.8	7.9
8/12/2010	3029.6	6.6	0.0	71.8	44.5	3.0	1458.2	252.3	6.3	6.9	8.9	1438.0	14.4	-19.8
8/13/2010	3007.2	4.3	0.0	67.2	44.5	3.0	1387.7	250.7	6.3	6.9	8.9	1469.8	14.7	-8.5
8/14/2010	2938.3	10.7	0.0	67.4	44.5	3.0	1317.5	246.0	6.3	6.9	8.9	1463.8	14.6	10.1
8/15/2010	3028.5	6.8	0.0	70.7	44.5	3.0	1489.0	250.7	6.3	6.9	8.9	1336.9	13.4	50.7
8/16/2010	3039.7	2.6	0.0	65.6	44.5	3.0	1555.4	251.2	6.3	6.9	8.9	1299.2	13.0	23.3
8/17/2010	3096.4	4.5	0.0	63.3	44.5	3.0	1542.6	254.0	6.3	6.9	8.9	1354.7	13.5	33.9
8/18/2010	3124.7	3.3	0.0	66.1	44.5	3.0	1506.0	256.9	6.3	6.9	8.9	1442.0	14.4	9.8
8/19/2010	3087.9	3.4	0.0	72.5	44.5	3.0	1504.3	256.2	6.3	6.9	8.9	1428.1	14.3	-4.3
8/20/2010	3026.7	8.3	0.0	75.9	44.5	3.0	1527.3	253.8	6.3	6.9	8.9	1348.8	13.5	1.4
8/21/2010	3053.0	1.8	0.0	73.3	44.5	3.0	1542.1	253.7	6.3	6.9	8.9	1317.0	13.2	35.6
8/22/2010	3183.2	7.1	0.0	73.7	44.5	3.0	1664.3	260.5	6.3	6.9	8.9	1305.1	13.1	54.5
8/23/2010	3147.1	4.9	0.0	74.6	44.5	3.0	1713.9	260.3	6.3	6.9	8.9	1299.2	13.0	-26.0
8/24/2010	3075.5	3.7	0.0	75.0	44.5	3.0	1662.3	255.7	6.3	6.9	8.9	1273.4	12.7	-14.6
8/25/2010	2829.3	5.8	0.0	94.1	44.5	3.0	1628.6	243.6	6.3	6.9	8.9	1158.3	11.6	-77.7
8/26/2010	2421.0	2.8	0.0	75.7	44.5	3.0	1385.1	222.0	6.3	6.9	8.9	1067.1	10.7	-151.9
8/27/2010	2305.0	5.8	0.0	74.1	44.5	3.0	1202.9	211.3	6.3	6.9	8.9	1003.6	10.0	-10.2
8/28/2010	2396.1	2.8	0.0	69.5	44.5	3.0	1170.2	215.4	6.3	6.9	8.9	1055.2	10.6	50.1
8/29/2010	2494.8	1.2	0.0	81.1	44.5	3.0	1138.5	222.1	6.3	6.9	8.9	1200.0	12.0	39.5
8/30/2010	2401.8	4.9	0.0	90.7	44.5	3.0	1127.9	218.9	6.3	6.9	8.9	1207.9	12.1	-34.2
8/31/2010	2121.8	3.8	0.0	81.0	44.5	3.0	908.7	204.9	6.3	6.9	8.9	1243.6	12.4	-128.0
9/1/2010	1799.2	0.9	0.0	75.7	44.5	3.0	531.7	184.6	6.3	5.5	8.9	1334.9	13.3	-151.7
9/2/2010	1652.9	4.8	0.0	72.7	44.5	3.0	288.5	172.6	6.3	5.5	8.9	1354.7	13.5	-62.5
9/3/2010	1676.5	2.8	0.0	72.5	44.5	3.0	254.9	171.8	6.3	5.5	8.9	1328.9	13.3	18.7
9/4/2010	1818.2	4.8	0.0	73.9	44.5	3.0	377.3	178.6	6.3	5.5	8.9	1251.6	12.5	112.0
9/5/2010	2143.6	4.1	0.0	80.6	44.5	3.0	734.3	199.9	6.3	5.5	8.9	1154.4	11.5	162.1
9/6/2010	2142.9	5.3	0.0	78.1	44.5	3.0	858.8	202.3	6.3	5.5	8.9	1176.2	11.8	11.6
9/7/2010	2128.4	5.6	0.0	72.1	44.5	3.0	775.1	200.8	6.3	5.5	8.9	1241.7	12.4	11.1



Table F1-2: RGCP Channel Water Budget Equation Analysis Segment 2

2010-12 Study Period

(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	MODFLOW Groundwater Return Flow	Downstream Channel Outflow, below Mesilla Dam	Channel Seepage	MODFLOW Floodplain Recharge	Open Water Channel Evaporation	MODFLOW Riparian Evapo-transpiration	Diversions Authorized (Del Rio, Eastside, & Westside)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
9/8/2010	2200.4	2.0	0.0	72.7	44.5	3.0	727.9	205.8	6.3	5.5	8.9	1334.9	13.3	29.1
9/9/2010	2104.6	2.1	0.0	74.6	44.5	3.0	735.0	204.7	6.3	5.5	8.9	1332.9	13.3	-68.5
9/10/2010	1834.6	2.4	0.0	77.4	44.5	3.0	719.4	188.2	6.3	5.5	8.9	1130.6	11.3	-98.1
9/11/2010	1443.5	3.2	0.0	79.0	44.5	3.0	817.0	163.0	6.3	5.5	8.9	724.0	7.2	-151.4
9/12/2010	1334.7	5.8	0.0	83.0	44.5	3.0	809.3	151.0	6.3	5.5	8.9	501.8	5.0	-11.9
9/13/2010	1130.9	3.0	0.0	81.9	44.5	3.0	855.2	138.4	6.3	5.5	8.9	345.1	3.5	-96.2
9/14/2010	998.9	3.3	0.0	70.9	44.5	3.0	704.1	125.6	6.3	5.5	8.9	325.3	3.3	-55.1
9/15/2010	930.9	2.1	0.0	68.7	44.5	3.0	608.6	118.4	6.3	5.5	8.9	321.3	3.2	-19.7
9/16/2010	882.9	3.7	0.0	69.5	44.5	3.0	532.3	114.6	6.3	5.5	8.9	349.1	3.5	-13.1
9/17/2010	798.3	1.6	0.0	73.2	44.5	3.0	468.7	108.4	6.3	5.5	8.9	368.9	3.7	-46.2
9/18/2010	749.3	3.1	0.0	68.2	44.5	3.0	391.0	102.0	6.3	5.5	8.9	368.9	3.7	-14.7
9/19/2010	769.9	3.0	0.0	64.5	44.5	3.0	439.0	101.8	6.3	5.5	8.9	285.6	2.9	37.8
9/20/2010	766.5	3.3	0.0	63.1	44.5	3.0	475.2	101.9	6.3	5.5	8.9	253.9	2.5	28.7
9/21/2010	865.1	0.5	0.0	65.4	44.5	3.0	422.0	107.5	6.3	5.5	8.9	335.2	3.4	93.1
9/22/2010	1024.5	3.7	0.0	63.5	44.5	3.0	463.9	121.3	6.3	5.5	8.9	404.6	4.0	128.6
9/23/2010	1047.3	3.8	0.0	66.5	44.5	3.0	590.1	127.8	6.3	5.5	8.9	404.6	4.0	22.0
9/24/2010	825.5	1.4	12.8	67.7	44.5	3.0	645.0	115.5	6.3	5.5	8.9	305.5	3.1	-131.9
9/25/2010	672.9	3.7	0.0	66.1	44.5	3.0	495.0	98.0	6.3	5.5	8.9	257.9	2.6	-81.4
9/26/2010	609.8	1.2	0.0	63.6	44.5	3.0	390.1	86.6	6.3	5.5	8.9	259.8	2.6	-35.1
9/27/2010	608.9	0.3	0.0	61.0	44.5	3.0	341.9	85.2	6.3	5.5	8.9	253.9	2.5	16.1
9/28/2010	608.1	0.2	0.0	59.6	44.5	3.0	335.5	85.5	6.3	5.5	8.9	257.9	2.6	15.8
9/29/2010	644.8	1.6	0.0	59.0	44.5	3.0	327.7	86.8	6.3	5.5	8.9	263.8	2.6	53.8
9/30/2010	807.7	1.6	0.0	58.0	44.5	3.0	345.2	98.8	6.3	5.5	8.9	285.6	2.9	164.5
10/1/2010	823.7	2.6	0.0	57.5	44.5	3.0	782.8	109.4	6.3	0.0	8.9	0.0	0.0	23.8
10/2/2010	772.4	0.7	0.0	56.2	44.5	3.0	753.1	104.3	6.3	0.0	8.9	0.0	0.0	4.3
10/3/2010	860.6	1.9	0.0	55.5	44.5	3.0	728.4	107.3	6.3	0.0	8.9	0.0	0.0	114.7
10/4/2010	893.1	2.0	0.0	55.4	44.5	3.0	837.0	114.7	6.3	0.0	8.9	0.0	0.0	31.1
10/5/2010	884.9	1.8	0.0	54.8	44.5	3.0	837.7	114.1	6.3	0.0	8.9	0.0	0.0	22.0
10/6/2010	783.1	0.4	0.0	53.8	44.5	3.0	818.8	107.8	6.3	0.0	8.9	0.0	0.0	-57.0
10/7/2010	678.0	0.5	0.0	54.1	44.5	3.0	722.1	97.7	6.3	0.0	8.9	0.0	0.0	-54.9
10/8/2010	103.4	1.1	23.1	53.9	44.5	3.0	224.9	87.2	6.3	0.0	8.9	0.0	0.0	-98.2
10/9/2010	45.7	1.2	6.6	54.5	44.5	3.0	151.3	45.7	6.3	0.0	8.9	0.0	0.0	-56.6
10/10/2010	13.3	0.8	0.0	52.9	44.5	3.0	101.4	13.3	6.3	0.0	8.9	0.0	0.0	-15.3
10/11/2010	8.6	2.7	0.0	50.8	44.5	3.0	71.2	8.6	6.3	0.0	8.9	0.0	0.0	14.6
10/12/2010	8.5	0.6	0.0	47.0	44.5	3.0	64.6	8.5	6.3	0.0	8.9	0.0	0.0	15.4
10/13/2010	8.5	1.7	0.0	43.3	44.5	3.0	61.1	8.5	6.3	0.0	8.9	0.0	0.0	16.3
10/14/2010	8.7	1.2	0.0	41.4	44.5	3.0	58.1	8.7	6.3	0.0	8.9	0.0	0.0	16.8
10/15/2010	8.5	2.1	0.0	40.0	44.5	3.0	56.5	8.5	6.3	0.0	8.9	0.0	0.0	17.9
10/16/2010	8.6	0.5	0.0	41.2	44.5	3.0	56.3	8.6	6.3	0.0	8.9	0.0	0.0	17.8
10/17/2010	8.7	5.0	0.0	40.0	44.5	3.0	56.5	8.7	6.3	0.0	8.9	0.0	0.0	20.8
10/18/2010	8.6	1.4	0.0	34.4	44.5	3.0	54.0	8.6	6.3	0.0	8.9	0.0	0.0	14.3
10/19/2010	8.7	3.2	0.0	29.9	44.5	3.0	49.4	8.7	6.3	0.0	8.9	0.0	0.0	16.0
10/20/2010	8.8	3.8	0.0	28.8	44.5	3.0	46.5	8.8	6.3	0.0	8.9	0.0	0.0	18.5
10/21/2010	8.8	2.8	0.0	28.1	44.5	3.0	45.6	8.8	6.3	0.0	8.9	0.0	0.0	17.7
10/22/2010	8.8	2.6	0.0	28.0	44.5	3.0	45.1	8.8	6.3	0.0	8.9	0.0	0.0	17.8
10/23/2010	9.1	2.6	0.0	27.2	44.5	3.0	44.9	9.1	6.3	0.0	8.9	0.0	0.0	17.2
10/24/2010	9.2	2.8	0.0	24.6	44.5	3.0	44.1	9.2	6.3	0.0	8.9	0.0	0.0	15.6
10/25/2010	9.2	1.6	0.0	23.9	44.5	3.0	42.2	9.2	6.3	0.0	8.9	0.0	0.0	15.6
10/26/2010	9.4	2.8	0.0	23.0	44.5	3.0	41.7	9.4	6.3	0.0	8.9	0.0	0.0	16.5
10/27/2010	9.3	2.2	0.0	22.2	44.5	3.0	40.6	9.3	6.3	0.0	8.9	0.0	0.0	16.1
10/28/2010	8.5	3.2	0.0	21.7	44.5	3.0	39.9	8.5	6.3	0.0	8.9	0.0	0.0	17.3

Table F1-2: RGCP Channel Water Budget Equation Analysis Segment 2

2010-12 Study Period

(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	MODFLOW Groundwater Return Flow	Downstream Channel Outflow, below Mesilla Dam	Channel Seepage	MODFLOW Floodplain Recharge	Open Water Channel Evaporation	MODFLOW Riparian Evapo-transpiration	Diversions Authorized (Del Rio, Eastside, & Westside)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
10/29/2010	8.3	1.4	0.0	21.6	44.5	3.0	39.0	8.3	6.3	0.0	8.9	0.0	0.0	16.3
10/30/2010	8.3	1.2	0.0	21.1	44.5	3.0	38.9	8.3	6.3	0.0	8.9	0.0	0.0	15.7
10/31/2010	8.4	0.7	0.0	20.6	44.5	3.0	38.4	8.4	6.3	0.0	8.9	0.0	0.0	15.2
11/1/2010	8.5	1.8	0.0	20.4	44.5	6.5	38.1	8.5	0.1	0.0	1.4	0.0	0.0	33.6
11/2/2010	8.4	0.5	0.0	19.0	44.5	6.5	37.5	8.4	0.1	0.0	1.4	0.0	0.0	31.5
11/3/2010	8.4	1.9	0.0	18.5	44.5	6.5	36.6	8.4	0.1	0.0	1.4	0.0	0.0	33.3
11/4/2010	8.4	0.5	0.0	20.3	44.5	6.5	36.7	8.4	0.1	0.0	1.4	0.0	0.0	33.7
11/5/2010	8.4	2.4	0.0	22.4	44.5	6.5	38.5	8.4	0.1	0.0	1.4	0.0	0.0	35.8
11/6/2010	8.4	0.4	0.0	24.8	44.5	6.5	40.5	8.4	0.1	0.0	1.4	0.0	0.0	34.2
11/7/2010	8.5	1.5	0.0	22.8	44.5	6.5	41.7	8.5	0.1	0.0	1.4	0.0	0.0	32.1
11/8/2010	8.5	1.4	0.0	22.4	44.5	6.5	40.1	8.5	0.1	0.0	1.4	0.0	0.0	33.2
11/9/2010	8.5	0.8	0.0	22.7	44.5	6.5	39.8	8.5	0.1	0.0	1.4	0.0	0.0	33.2
11/10/2010	8.6	0.2	0.0	31.9	44.5	6.5	42.3	8.6	0.1	0.0	1.4	0.0	0.0	39.3
11/11/2010	8.5	1.2	0.0	32.5	44.5	6.5	48.2	8.5	0.1	0.0	1.4	0.0	0.0	35.0
11/12/2010	8.6	0.7	0.0	34.2	44.5	6.5	49.1	8.6	0.1	0.0	1.4	0.0	0.0	35.3
11/13/2010	8.6	1.1	0.0	44.3	44.5	6.5	53.5	8.6	0.1	0.0	1.4	0.0	0.0	41.4
11/14/2010	8.7	4.9	0.0	54.3	44.5	6.5	62.6	8.7	0.1	0.0	1.4	0.0	0.0	46.2
11/15/2010	8.7	0.9	0.0	72.8	44.5	6.5	74.4	8.7	0.1	0.0	1.4	0.0	0.0	48.8
11/16/2010	8.7	1.6	0.0	89.9	44.5	6.5	91.0	8.7	0.1	0.0	1.4	0.0	0.0	50.0
11/17/2010	8.9	0.2	0.0	89.3	44.5	6.5	100.7	8.9	0.1	0.0	1.4	0.0	0.0	38.3
11/18/2010	9.0	0.2	0.0	89.6	44.5	6.5	100.4	9.0	0.1	0.0	1.4	0.0	0.0	39.0
11/19/2010	9.0	0.7	0.0	97.8	44.5	6.5	103.1	9.0	0.1	0.0	1.4	0.0	0.0	44.9
11/20/2010	9.0	0.1	0.0	110.3	44.5	6.5	111.5	9.0	0.1	0.0	1.4	0.0	0.0	48.4
11/21/2010	9.1	0.1	0.0	121.0	44.5	6.5	122.3	9.1	0.1	0.0	1.4	0.0	0.0	48.3
11/22/2010	9.1	0.3	0.0	120.7	44.5	6.5	128.9	9.1	0.1	0.0	1.4	0.0	0.0	41.6
11/23/2010	9.2	0.3	0.0	127.0	44.5	6.5	130.2	9.2	0.1	0.0	1.4	0.0	0.0	46.6
11/24/2010	9.3	1.0	0.0	125.6	44.5	6.5	134.0	9.3	0.1	0.0	1.4	0.0	0.0	42.2
11/25/2010	9.3	0.1	0.0	125.6	44.5	6.5	133.2	9.3	0.1	0.0	1.4	0.0	0.0	42.0
11/26/2010	9.3	0.7	0.0	127.5	44.5	6.5	133.4	9.3	0.1	0.0	1.4	0.0	0.0	44.3
11/27/2010	9.3	2.2	0.0	130.1	44.5	6.5	135.3	9.3	0.1	0.0	1.4	0.0	0.0	46.6
11/28/2010	9.2	1.4	0.0	121.1	44.5	6.5	134.6	9.2	0.1	0.0	1.4	0.0	0.0	37.4
11/29/2010	9.2	1.1	0.0	120.7	44.5	6.5	128.6	9.2	0.1	0.0	1.4	0.0	0.0	42.7
11/30/2010	9.2	0.5	0.0	118.9	44.5	6.5	127.5	9.2	0.1	0.0	1.4	0.0	0.0	41.4
12/1/2010	9.2	1.4	0.0	98.7	44.5	6.5	120.9	9.2	0.1	0.0	1.4	0.0	0.0	28.6
12/2/2010	9.3	0.2	0.0	95.3	44.5	6.5	107.0	9.3	0.1	0.0	1.4	0.0	0.0	38.1
12/3/2010	9.3	2.1	0.0	99.9	44.5	6.5	106.0	9.3	0.1	0.0	1.4	0.0	0.0	45.5
12/4/2010	9.5	0.9	0.0	111.5	44.5	6.5	111.9	9.5	0.1	0.0	1.4	0.0	0.0	49.9
12/5/2010	9.4	2.3	0.0	116.5	44.5	6.5	120.7	9.4	0.1	0.0	1.4	0.0	0.0	47.6
12/6/2010	9.5	0.9	0.0	53.9	44.5	6.5	106.3	9.5	0.1	0.0	1.4	0.0	0.0	-2.0
12/7/2010	9.5	0.9	0.0	9.9	44.5	6.5	51.0	9.5	0.1	0.0	1.4	0.0	0.0	9.4
12/8/2010	9.5	1.8	0.0	10.0	44.5	6.5	26.1	9.5	0.1	0.0	1.4	0.0	0.0	35.2
12/9/2010	9.5	1.7	0.0	10.4	44.5	6.5	26.2	9.5	0.1	0.0	1.4	0.0	0.0	35.4
12/10/2010	9.5	1.6	0.0	12.7	44.5	6.5	26.8	9.5	0.1	0.0	1.4	0.0	0.0	36.9
12/11/2010	9.5	1.8	0.0	10.8	44.5	6.5	27.7	9.5	0.1	0.0	1.4	0.0	0.0	34.4
12/12/2010	9.6	0.7	0.0	10.9	44.5	6.5	26.5	9.6	0.1	0.0	1.4	0.0	0.0	34.6
12/13/2010	9.5	1.6	0.0	14.4	44.5	6.5	27.3	9.5	0.1	0.0	1.4	0.0	0.0	38.2
12/14/2010	9.6	1.8	0.0	13.4	44.5	6.5	29.3	9.6	0.1	0.0	1.4	0.0	0.0	35.4
12/15/2010	9.6	3.2	0.0	20.3	44.5	6.5	30.6	9.6	0.1	0.0	1.4	0.0	0.0	42.4
12/16/2010	9.5	0.5	0.0	23.1	44.5	6.5	35.6	9.5	0.1	0.0	1.4	0.0	0.0	37.4
12/17/2010	9.6	1.6	0.0	20.2	44.5	6.5	36.4	9.6	0.1	0.0	1.4	0.0	0.0	34.8
12/18/2010	9.6	2.2	0.0	21.6	44.5	6.5	34.9	9.6	0.1	0.0	1.4	0.0	0.0	38.4

Table F1-2: RGCP Channel Water Budget Equation Analysis Segment 2

2010-12 Study Period

(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	MODFLOW Groundwater Return Flow	Downstream Channel Outflow, below Mesilla Dam	Channel Seepage	MODFLOW Floodplain Recharge	Open Water Channel Evaporation	MODFLOW Riparian Evapo- transpiration	Diversions Authorized (Del Rio, Eastside, & Westside)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
12/19/2010	9.6	1.1	0.0	32.2	44.5	6.5	38.7	9.6	0.1	0.0	1.4	0.0	0.0	44.2
12/20/2010	9.5	1.9	0.0	48.5	44.5	6.5	51.1	9.5	0.1	0.0	1.4	0.0	0.0	48.8
12/21/2010	4.9	0.2	0.0	60.7	44.5	6.5	64.2	4.9	0.1	0.0	1.4	0.0	0.0	46.2
12/22/2010	8.6	2.2	0.0	67.7	44.5	6.5	69.8	8.6	0.1	0.0	1.4	0.0	0.0	49.6
12/23/2010	9.6	1.0	0.0	69.6	44.5	6.5	77.7	9.6	0.1	0.0	1.4	0.0	0.0	42.4
12/24/2010	9.6	1.2	0.0	70.4	44.5	6.5	79.9	9.6	0.1	0.0	1.4	0.0	0.0	41.2
12/25/2010	9.7	1.2	0.0	77.9	44.5	6.5	82.9	9.7	0.1	0.0	1.4	0.0	0.0	45.7
12/26/2010	9.7	2.8	0.0	82.2	44.5	6.5	88.7	9.7	0.1	0.0	1.4	0.0	0.0	45.9
12/27/2010	9.8	2.0	0.0	89.0	44.5	6.5	93.5	9.8	0.1	0.0	1.4	0.0	0.0	47.0
12/28/2010	9.8	1.0	0.0	92.1	44.5	6.5	98.4	9.8	0.1	0.0	1.4	0.0	0.0	44.2
12/29/2010	9.8	2.4	0.0	93.9	44.5	6.5	100.7	9.8	0.1	0.0	1.4	0.0	0.0	45.1
12/30/2010	9.8	2.0	0.0	95.7	44.5	6.5	102.4	9.8	0.1	0.0	1.4	0.0	0.0	44.9
12/31/2010	9.8	0.3	0.0	99.2	44.5	6.5	104.5	9.8	0.1	0.0	1.4	0.0	0.0	44.5
1/1/2011	9.8	1.4	0.0	101.3	44.5	6.5	107.2	9.8	0.1	0.0	1.4	0.0	0.0	45.0
1/2/2011	9.8	1.2	0.0	105.7	44.5	6.5	109.6	9.8	0.1	0.0	1.4	0.0	0.0	46.8
1/3/2011	9.8	0.5	0.0	110.5	44.5	6.5	113.8	9.8	0.1	0.0	1.4	0.0	0.0	46.8
1/4/2011	9.9	1.3	0.0	110.7	44.5	6.5	116.8	9.9	0.1	0.0	1.4	0.0	0.0	44.7
1/5/2011	10.0	0.5	0.0	110.2	44.5	6.5	116.7	10.0	0.1	0.0	1.4	0.0	0.0	43.4
1/6/2011	10.0	1.6	0.0	108.4	44.5	6.5	116.0	10.0	0.1	0.0	1.4	0.0	0.0	43.6
1/7/2011	10.1	1.9	0.0	109.1	44.5	6.5	115.0	10.1	0.1	0.0	1.4	0.0	0.0	45.5
1/8/2011	12.7	1.2	0.0	110.8	44.5	6.5	116.1	12.7	0.1	0.0	1.4	0.0	0.0	45.5
1/9/2011	18.8	1.2	0.0	111.0	44.5	6.5	119.3	18.8	0.1	0.0	1.4	0.0	0.0	42.4
1/10/2011	19.8	0.9	0.0	112.0	44.5	6.5	124.6	19.8	0.1	0.0	1.4	0.0	0.0	37.7
1/11/2011	19.9	2.0	0.0	113.7	44.5	6.5	126.9	19.9	0.1	0.0	1.4	0.0	0.0	38.3
1/12/2011	20.0	0.7	0.0	113.9	44.5	6.5	128.1	20.0	0.1	0.0	1.4	0.0	0.0	36.0
1/13/2011	20.3	2.2	0.0	115.5	44.5	6.5	128.8	20.3	0.1	0.0	1.4	0.0	0.0	38.4
1/14/2011	20.2	0.3	0.0	116.1	44.5	6.5	130.2	20.2	0.1	0.0	1.4	0.0	0.0	35.7
1/15/2011	19.7	1.1	0.0	115.6	44.5	6.5	130.3	19.7	0.1	0.0	1.4	0.0	0.0	35.9
1/16/2011	19.7	0.2	0.0	115.6	44.5	6.5	129.6	19.7	0.1	0.0	1.4	0.0	0.0	35.7
1/17/2011	19.7	0.4	30.9	0.0	44.5	6.5	95.1	19.7	0.1	0.0	1.4	0.0	0.0	-14.3
1/18/2011	19.7	1.6	0.0	69.4	44.5	6.5	43.4	19.7	0.1	0.0	1.4	0.0	0.0	77.1
1/19/2011	19.7	1.2	0.0	27.7	44.5	6.5	72.8	19.7	0.1	0.0	1.4	0.0	0.0	5.6
1/20/2011	19.0	1.4	0.0	17.0	44.5	6.5	45.0	19.0	0.1	0.0	1.4	0.0	0.0	22.9
1/21/2011	5.4	1.0	0.0	13.4	44.5	6.5	37.4	5.4	0.1	0.0	1.4	0.0	0.0	26.5
1/22/2011	5.9	1.2	0.0	19.5	44.5	6.5	25.5	5.9	0.1	0.0	1.4	0.0	0.0	44.7
1/23/2011	6.2	0.1	0.0	24.7	44.5	6.5	30.5	6.2	0.1	0.0	1.4	0.0	0.0	43.8
1/24/2011	6.3	1.3	0.0	34.9	44.5	6.5	36.7	6.3	0.1	0.0	1.4	0.0	0.0	49.0
1/25/2011	6.4	1.2	0.0	37.2	44.5	6.5	44.1	6.4	0.1	0.0	1.4	0.0	0.0	43.8
1/26/2011	6.3	0.5	0.0	27.2	44.5	6.5	42.8	6.3	0.1	0.0	1.4	0.0	0.0	34.4
1/27/2011	6.2	0.9	0.0	10.8	44.5	6.5	32.0	6.2	0.1	0.0	1.4	0.0	0.0	29.3
1/28/2011	6.2	0.6	0.0	8.9	44.5	6.5	20.9	6.2	0.1	0.0	1.4	0.0	0.0	38.1
1/29/2011	23.4	0.3	0.0	14.1	44.5	6.5	20.9	23.4	0.1	0.0	1.4	0.0	0.0	43.0
1/30/2011	16.5	0.7	0.0	18.4	44.5	6.5	38.5	16.5	0.1	0.0	1.4	0.0	0.0	30.1
1/31/2011	14.0	1.2	0.0	24.9	44.5	6.5	39.5	14.0	0.1	0.0	1.4	0.0	0.0	36.1
2/1/2011	14.0	0.6	0.0	27.5	44.5	6.5	41.5	14.0	0.1	0.0	1.4	0.0	0.0	36.1
2/2/2011	14.1	0.3	0.0	27.1	44.5	6.5	43.1	14.1	0.1	0.0	1.4	0.0	0.0	33.8
2/3/2011	14.0	1.0	0.0	25.8	44.5	6.5	42.8	14.0	0.1	0.0	1.4	0.0	0.0	33.6
2/4/2011	14.1	1.2	0.0	27.2	44.5	6.5	42.1	14.1	0.1	0.0	1.4	0.0	0.0	35.7
2/5/2011	14.1	1.6	0.0	28.3	44.5	6.5	43.3	14.1	0.1	0.0	1.4	0.0	0.0	36.1
2/6/2011	14.0	1.0	0.0	29.3	44.5	6.5	44.2	14.0	0.1	0.0	1.4	0.0	0.0	35.7
2/7/2011	14.0	1.1	0.0	30.2	44.5	6.5	45.1	14.0	0.1	0.0	1.4	0.0	0.0	35.7

Table F1-2: RGCP Channel Water Budget Equation Analysis Segment 2

2010-12 Study Period

(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	MODFLOW Groundwater Return Flow	Downstream Channel Outflow, below Mesilla Dam	Channel Seepage	MODFLOW Floodplain Recharge	Open Water Channel Evaporation	MODFLOW Riparian Evapo- transpiration	Diversions Authorized (Del Rio, Eastside, & Westside)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
2/8/2011	14.0	0.9	0.0	35.2	44.5	6.5	47.4	14.0	0.1	0.0	1.4	0.0	0.0	38.2
2/9/2011	14.8	1.4	0.0	37.5	44.5	6.5	50.9	14.8	0.1	0.0	1.4	0.0	0.0	37.5
2/10/2011	25.5	0.3	0.0	26.5	44.5	6.5	49.3	25.5	0.1	0.0	1.4	0.0	0.0	27.0
2/11/2011	16.3	0.5	0.0	14.0	44.5	6.5	47.7	16.3	0.1	0.0	1.4	0.0	0.0	16.3
2/12/2011	24.8	3.1	0.0	11.8	44.5	6.5	32.9	24.8	0.1	0.0	1.4	0.0	0.0	31.5
2/13/2011	13.9	0.8	0.0	14.7	44.5	6.5	38.4	13.9	0.1	0.0	1.4	0.0	0.0	26.6
2/14/2011	11.2	1.6	0.0	14.2	44.5	6.5	32.0	11.2	0.1	0.0	1.4	0.0	0.0	33.3
2/15/2011	11.3	0.6	0.0	15.2	44.5	6.5	29.0	11.3	0.1	0.0	1.4	0.0	0.0	36.4
2/16/2011	11.2	1.0	0.0	16.5	44.5	6.5	29.9	11.2	0.1	0.0	1.4	0.0	0.0	37.1
2/17/2011	9.1	1.3	0.0	16.6	44.5	6.5	30.7	9.1	0.1	0.0	1.4	0.0	0.0	36.7
2/18/2011	6.0	0.3	0.0	13.8	44.5	6.5	28.2	6.0	0.1	0.0	1.4	0.0	0.0	35.5
2/19/2011	6.2	0.6	0.0	13.1	44.5	6.5	23.4	6.2	0.1	0.0	1.4	0.0	0.0	39.8
2/20/2011	6.3	0.8	0.0	14.0	44.5	6.5	23.6	6.3	0.1	0.0	1.4	0.0	0.0	40.7
2/21/2011	6.2	2.2	0.0	13.0	44.5	6.5	23.9	6.2	0.1	0.0	1.4	0.0	0.0	40.9
2/22/2011	6.2	0.9	0.0	9.5	44.5	6.5	22.3	6.2	0.1	0.0	1.4	0.0	0.0	37.6
2/23/2011	6.2	0.1	0.0	8.4	44.5	6.5	19.9	6.2	0.1	0.0	1.4	0.0	0.0	38.2
2/24/2011	6.1	2.6	0.0	9.5	44.5	6.5	19.3	6.1	0.1	0.0	1.4	0.0	0.0	42.3
2/25/2011	6.2	0.5	0.0	10.1	44.5	6.5	20.3	6.2	0.1	0.0	1.4	0.0	0.0	39.9
2/26/2011	6.2	0.4	0.0	9.8	44.5	6.5	20.5	6.2	0.1	0.0	1.4	0.0	0.0	39.1
2/27/2011	6.2	0.1	0.0	10.2	44.5	6.5	20.5	6.2	0.1	0.0	1.4	0.0	0.0	39.3
2/28/2011	6.2	0.2	0.0	11.5	44.5	6.5	21.1	6.2	0.1	0.0	1.4	0.0	0.0	40.0
3/1/2011	6.2	1.6	0.0	11.4	44.5	3.0	21.9	6.2	6.3	2.8	8.9	0.0	0.0	20.7
3/2/2011	6.2	1.1	0.0	11.6	44.5	3.0	21.9	6.2	6.3	2.8	8.9	0.0	0.0	20.4
3/3/2011	6.1	1.2	0.0	12.6	44.5	3.0	22.2	6.1	6.3	2.8	8.9	0.0	0.0	21.1
3/4/2011	6.3	0.8	0.0	14.3	44.5	3.0	23.2	6.3	6.3	2.8	8.9	0.0	0.0	21.4
3/5/2011	6.1	0.2	0.0	13.5	44.5	3.0	24.1	6.1	6.3	2.8	8.9	0.0	0.0	19.1
3/6/2011	6.2	0.2	0.0	11.0	44.5	3.0	23.1	6.2	6.3	2.8	8.9	0.0	0.0	17.7
3/7/2011	6.2	0.6	0.0	10.1	44.5	3.0	21.3	6.2	6.3	2.8	8.9	0.0	0.0	19.0
3/8/2011	6.1	0.4	0.0	9.1	44.5	3.0	20.5	6.1	6.3	2.8	8.9	0.0	0.0	18.6
3/9/2011	6.2	0.1	0.0	7.4	44.5	3.0	19.4	6.2	6.3	2.8	8.9	0.0	0.0	17.7
3/10/2011	6.1	0.9	0.0	6.2	44.5	3.0	17.9	6.1	6.3	2.8	8.9	0.0	0.0	18.7
3/11/2011	492.1	1.2	0.0	5.6	44.5	3.0	431.6	67.2	6.3	2.8	8.9	0.0	0.0	29.6
3/12/2011	492.1	1.1	0.0	6.2	44.5	3.0	431.3	67.2	6.3	2.8	8.9	0.0	0.0	30.4
3/13/2011	720.3	0.4	0.0	6.1	44.5	3.0	432.0	81.4	6.3	2.8	8.9	0.0	0.0	242.9
3/14/2011	792.5	0.4	0.0	4.2	44.5	3.0	648.1	101.8	6.3	2.8	8.9	0.0	0.0	76.8
3/15/2011	793.7	0.9	0.0	3.3	44.5	3.0	694.7	102.4	6.3	2.8	8.9	0.0	0.0	30.4
3/16/2011	1073.1	0.0	0.0	3.4	44.5	3.0	702.0	117.0	6.3	2.8	8.9	0.0	0.0	287.1
3/17/2011	1590.1	0.1	0.0	3.2	44.5	3.0	1129.5	158.6	6.3	2.8	8.9	0.0	0.0	334.8
3/18/2011	1752.7	0.9	0.0	3.5	44.5	3.0	1492.6	175.4	6.3	2.8	8.9	0.0	0.0	118.6
3/19/2011	2242.1	0.3	0.0	3.6	44.5	3.0	1816.4	204.3	6.3	2.8	8.9	0.0	0.0	254.7
3/20/2011	2439.7	0.8	0.0	3.5	44.5	3.0	2153.6	219.8	6.3	2.8	8.9	0.0	0.0	100.2
3/21/2011	2450.1	0.0	0.0	3.5	44.5	3.0	2218.0	221.0	6.3	2.8	8.9	0.0	0.0	44.2
3/22/2011	2614.9	0.3	0.0	3.8	44.5	3.0	2313.2	229.2	6.3	2.8	8.9	0.0	0.0	106.2
3/23/2011	2805.0	0.1	0.0	3.5	44.5	3.0	2502.2	240.3	6.3	2.8	8.9	0.0	0.0	95.7
3/24/2011	2847.4	0.1	0.0	3.3	44.5	3.0	2594.2	243.6	6.3	2.8	8.9	0.0	0.0	42.6
3/25/2011	2854.2	0.0	0.0	3.6	44.5	3.0	2609.3	244.1	6.3	2.8	8.9	0.0	0.0	34.0
3/26/2011	2506.8	0.1	75.1	3.8	44.5	3.0	2630.1	238.4	6.3	2.8	8.9	0.0	0.0	-253.3
3/27/2011	816.9	1.5	557.8	4.0	44.5	3.0	1423.2	133.2	6.3	2.8	8.9	0.0	0.0	-146.7
3/28/2011	505.1	0.7	100.7	4.2	44.5	3.0	654.4	78.2	6.3	2.8	8.9	0.0	0.0	-92.4
3/29/2011	492.1	0.3	0.0	4.3	44.5	3.0	445.7	67.3	6.3	2.8	8.9	0.0	0.0	13.3
3/30/2011	492.2	0.0	0.0	4.5	44.5	3.0	430.1	67.2	6.3	2.8	8.9	0.0	0.0	29.0



Table F1-2: RGCP Channel Water Budget Equation Analysis Segment 2

2010-12 Study Period

(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	MODFLOW Groundwater Return Flow	Downstream Channel Outflow, below Mesilla Dam	Channel Seepage	MODFLOW Floodplain Recharge	Open Water Channel Evaporation	MODFLOW Riparian Evapo- transpiration	Diversions Authorized (Del Rio, Eastside, & Westside)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
3/31/2011	2949.6	0.1	0.0	4.5	44.5	3.0	430.2	189.4	6.3	2.8	8.9	0.0	0.0	2364.2
4/1/2011	2563.6	0.1	0.0	4.8	44.5	3.0	2095.6	233.1	6.3	6.1	8.9	446.3	4.5	-180.3
4/2/2011	2042.6	0.7	0.0	4.8	44.5	3.0	1594.6	202.8	6.3	6.1	8.9	472.1	4.7	-195.0
4/3/2011	1827.9	0.6	0.0	4.1	44.5	3.0	1290.8	185.9	6.3	6.1	8.9	450.2	4.5	-68.1
4/4/2011	1846.7	0.7	0.0	4.1	44.5	3.0	1278.6	184.0	6.3	6.1	8.9	368.9	3.7	46.2
4/5/2011	2016.5	1.1	0.0	4.4	44.5	3.0	1420.5	193.3	6.3	6.1	8.9	321.3	3.2	113.1
4/6/2011	2217.2	1.2	0.0	4.2	44.5	3.0	1608.3	206.0	6.3	6.1	8.9	321.3	3.2	113.3
4/7/2011	2270.6	0.2	0.0	4.1	44.5	3.0	1657.2	211.9	6.3	6.1	8.9	410.6	4.1	21.5
4/8/2011	2037.2	0.1	0.0	3.3	44.5	3.0	1557.4	199.7	6.3	6.1	8.9	392.7	3.9	-83.0
4/9/2011	1868.5	0.0	0.0	2.2	44.5	3.0	1378.9	188.6	6.3	6.1	8.9	388.8	3.9	-59.3
4/10/2011	1676.9	0.0	0.0	2.5	44.5	3.0	1449.1	176.1	6.3	6.1	8.9	138.8	1.4	-58.4
4/11/2011	1574.3	0.9	0.0	2.8	44.5	3.0	1453.8	167.8	6.3	6.1	8.9	0.0	0.0	-17.4
4/12/2011	1569.1	1.1	0.0	2.9	44.5	3.0	1409.6	166.3	6.3	6.1	8.9	0.0	0.0	23.4
4/13/2011	1453.7	0.2	0.0	2.7	44.5	3.0	1363.7	159.8	6.3	6.1	8.9	0.0	0.0	-40.7
4/14/2011	1360.0	0.1	0.0	2.7	44.5	3.0	1262.5	152.4	6.3	6.1	8.9	0.0	0.0	-25.8
4/15/2011	1360.1	1.4	0.0	2.8	44.5	3.0	1208.5	150.6	6.3	6.1	8.9	0.0	0.0	31.4
4/16/2011	1368.4	0.3	0.0	3.1	44.5	3.0	1214.0	151.0	6.3	6.1	8.9	0.0	0.0	33.0
4/17/2011	1589.3	0.2	0.0	3.2	44.5	3.0	1293.9	163.1	6.3	6.1	8.9	0.0	0.0	161.9
4/18/2011	1893.5	0.2	0.0	3.3	44.5	3.0	1344.1	184.1	6.3	6.1	8.9	234.0	2.3	161.0
4/19/2011	1978.6	0.2	0.0	3.9	44.5	3.0	1456.2	192.2	6.3	6.1	8.9	299.5	3.0	61.0
4/20/2011	2039.4	0.1	0.0	3.8	44.5	3.0	1522.7	196.8	6.3	6.1	8.9	303.5	3.0	46.5
4/21/2011	1948.7	0.1	0.0	3.3	44.5	3.0	1505.5	193.0	6.3	6.1	8.9	307.4	3.1	-27.7
4/22/2011	1728.1	1.0	0.0	2.8	44.5	3.0	1361.6	180.3	6.3	6.1	8.9	303.5	3.0	-87.2
4/23/2011	1490.0	0.7	0.0	0.8	44.5	3.0	1151.2	163.9	6.3	6.1	8.9	299.5	3.0	-96.9
4/24/2011	1493.2	0.7	0.0	0.3	44.5	3.0	1033.8	159.9	6.3	6.1	8.9	289.6	2.9	37.1
4/25/2011	1634.7	0.4	0.0	0.3	44.5	3.0	1084.9	168.4	6.3	6.1	8.9	307.4	3.1	100.9
4/26/2011	1659.5	0.3	0.0	0.3	44.5	3.0	1173.7	171.4	6.3	6.1	8.9	299.5	3.0	41.9
4/27/2011	1878.4	0.7	0.0	0.3	44.5	3.0	1317.1	185.3	6.3	6.1	8.9	287.6	2.9	115.7
4/28/2011	1573.7	0.1	0.0	0.3	44.5	3.0	1196.8	170.7	6.3	6.1	8.9	368.9	3.7	-136.1
4/29/2011	1456.7	0.1	0.0	0.4	44.5	3.0	988.4	160.0	6.3	6.1	8.9	374.9	3.7	-39.8
4/30/2011	1189.6	0.4	0.0	1.6	44.5	3.0	877.7	143.0	6.3	6.1	8.9	329.3	3.3	-132.2
5/1/2011	985.8	0.1	0.0	1.8	44.5	3.0	966.1	125.2	6.3	9.6	8.9	0.0	0.0	-80.9
5/2/2011	886.0	1.8	0.0	2.0	44.5	3.0	831.0	113.6	6.3	9.6	8.9	0.0	0.0	-32.1
5/3/2011	843.7	1.4	0.0	1.9	44.5	3.0	763.4	108.4	6.3	9.6	8.9	0.0	0.0	-2.1
5/4/2011	781.5	0.3	0.0	1.2	44.5	3.0	729.5	103.4	6.3	9.6	8.9	0.0	0.0	-27.1
5/5/2011	742.7	0.5	0.0	1.5	44.5	3.0	675.0	98.1	6.3	9.6	8.9	0.0	0.0	-5.8
5/6/2011	746.4	0.4	0.0	1.4	44.5	3.0	645.8	96.5	6.3	9.6	8.9	0.0	0.0	28.7
5/7/2011	762.7	1.2	0.0	1.3	44.5	3.0	654.0	98.8	6.3	9.6	8.9	0.0	0.0	35.1
5/8/2011	895.6	0.0	0.0	1.1	44.5	3.0	667.2	105.8	6.3	9.6	8.9	0.0	0.0	146.4
5/9/2011	1293.8	0.0	0.0	1.2	44.5	3.0	858.0	136.0	6.3	9.6	8.9	0.0	0.0	323.8
5/10/2011	1334.5	0.0	0.0	1.1	44.5	3.0	1184.8	148.5	6.3	9.6	8.9	0.0	0.0	25.0
5/11/2011	1494.7	0.6	0.0	0.2	44.5	3.0	1239.8	157.5	6.3	9.6	8.9	0.0	0.0	121.0
5/12/2011	1589.8	0.0	0.0	0.7	44.5	3.0	1380.1	166.4	6.3	9.6	8.9	0.0	0.0	66.8
5/13/2011	1447.8	0.1	0.0	0.2	44.5	3.0	1371.7	159.8	6.3	9.6	8.9	0.0	0.0	-60.6
5/14/2011	1336.6	1.0	0.0	0.9	44.5	3.0	1247.8	150.8	6.3	9.6	8.9	0.0	0.0	-37.4
5/15/2011	1326.4	1.2	0.0	1.5	44.5	3.0	1180.9	148.2	6.3	9.6	8.9	0.0	0.0	22.7
5/16/2011	1327.7	1.8	0.0	1.7	44.5	3.0	1179.8	148.1	6.3	9.6	8.9	0.0	0.0	26.0
5/17/2011	1442.6	0.4	0.0	1.7	44.5	3.0	1218.0	154.4	6.3	9.6	8.9	0.0	0.0	95.1
5/18/2011	1648.8	0.5	0.0	1.8	44.5	3.0	1369.0	168.3	6.3	9.6	8.9	0.0	0.0	136.6
5/19/2011	1747.1	0.0	0.0	1.8	44.5	3.0	1532.2	177.4	6.3	9.6	8.9	0.0	0.0	62.0
5/20/2011	1600.8	0.4	0.0	2.0	44.5	3.0	1510.2	170.6	6.3	9.6	8.9	0.0	0.0	-54.8



Table F1-2: RGCP Channel Water Budget Equation Analysis Segment 2

2010-12 Study Period

(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	MODFLOW Groundwater Return Flow	Downstream Channel Outflow, below Mesilla Dam	Channel Seepage	MODFLOW Floodplain Recharge	Open Water Channel Evaporation	MODFLOW Riparian Evapo-transpiration	Diversions Authorized (Del Rio, Eastside, & Westside)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
5/21/2011	1486.0	1.6	0.0	2.7	44.5	3.0	1389.6	162.2	6.3	9.6	8.9	0.0	0.0	-38.8
5/22/2011	1274.6	0.2	0.0	2.6	44.5	3.0	1251.3	148.3	6.3	9.6	8.9	0.0	0.0	-99.5
5/23/2011	1141.2	1.3	0.0	2.3	44.5	3.0	1081.8	136.3	6.3	9.6	8.9	0.0	0.0	-50.6
5/24/2011	1122.5	0.3	0.0	1.4	44.5	3.0	994.4	132.3	6.3	9.6	8.9	0.0	0.0	20.2
5/25/2011	1078.3	1.6	0.0	1.2	44.5	3.0	982.0	129.7	6.3	9.6	8.9	0.0	0.0	-7.9
5/26/2011	1020.1	0.2	0.0	1.0	44.5	3.0	935.2	125.0	6.3	9.6	8.9	0.0	0.0	-16.2
5/27/2011	1009.3	0.9	0.0	0.9	44.5	3.0	889.6	122.5	6.3	9.6	8.9	0.0	0.0	21.8
5/28/2011	1099.8	1.0	0.0	1.0	44.5	3.0	900.8	127.5	6.3	9.6	8.9	0.0	0.0	96.4
5/29/2011	1311.5	0.5	0.0	1.4	44.5	3.0	1032.9	142.3	6.3	9.6	8.9	0.0	0.0	160.9
5/30/2011	1516.6	0.0	0.0	1.7	44.5	3.0	1246.1	158.7	6.3	9.6	8.9	0.0	0.0	136.3
5/31/2011	1724.8	1.2	0.0	1.8	44.5	3.0	1422.7	171.5	6.3	9.6	8.9	0.0	0.0	156.3
6/1/2011	2492.3	0.6	0.0	2.0	44.5	3.0	1671.5	218.7	6.3	9.9	8.9	319.3	3.2	306.2
6/2/2011	2572.9	0.4	0.0	2.4	44.5	3.0	1512.1	229.5	6.3	9.9	8.9	858.8	8.6	-5.4
6/3/2011	2454.0	1.0	0.0	2.7	44.5	3.0	1380.8	222.7	6.3	9.9	8.9	902.5	9.0	-28.8
6/4/2011	2447.6	0.4	0.0	2.5	44.5	3.0	1319.2	221.2	6.3	9.9	8.9	910.4	9.1	19.0
6/5/2011	2517.4	0.3	0.0	2.0	44.5	3.0	1258.9	225.1	6.3	9.9	8.9	1021.5	10.2	33.6
6/6/2011	2500.0	1.1	0.0	2.5	44.5	3.0	1299.4	225.2	6.3	9.9	8.9	999.7	10.0	-1.2
6/7/2011	2420.8	2.5	0.0	3.0	44.5	3.0	1248.3	220.1	6.3	9.9	8.9	981.8	9.8	-4.4
6/8/2011	2512.7	1.2	0.0	3.2	44.5	3.0	1291.9	223.7	6.3	9.9	8.9	952.1	9.5	68.8
6/9/2011	2627.1	0.3	0.0	3.0	44.5	3.0	1403.5	231.8	6.3	9.9	8.9	979.8	9.8	34.4
6/10/2011	2516.4	3.5	0.0	3.4	44.5	3.0	1365.6	226.5	6.3	9.9	8.9	977.9	9.8	-27.9
6/11/2011	2491.0	0.7	0.0	3.5	44.5	3.0	1293.1	223.7	6.3	9.9	8.9	981.8	9.8	15.2
6/12/2011	2584.3	0.9	0.0	3.9	44.5	3.0	1339.2	228.8	6.3	9.9	8.9	993.7	9.9	46.2
6/13/2011	2616.6	0.2	0.0	4.2	44.5	3.0	1374.9	230.5	6.3	9.9	8.9	999.7	10.0	34.7
6/14/2011	2686.1	1.9	0.0	4.1	44.5	3.0	1459.0	234.7	6.3	9.9	8.9	979.8	9.8	37.2
6/15/2011	2681.4	3.2	0.0	4.1	44.5	3.0	1419.9	234.9	6.3	9.9	8.9	1043.3	10.4	9.2
6/16/2011	2666.5	1.8	0.0	4.3	44.5	3.0	1381.6	234.4	6.3	9.9	8.9	1075.0	10.8	0.3
6/17/2011	2540.0	2.5	0.0	4.4	44.5	3.0	1377.1	228.8	6.3	9.9	8.9	1007.6	10.1	-47.9
6/18/2011	2326.9	4.5	0.0	4.5	44.5	3.0	1211.4	216.3	6.3	9.9	8.9	993.7	9.9	-66.8
6/19/2011	2285.6	1.4	0.0	4.3	44.5	3.0	1185.1	212.3	6.3	9.9	8.9	906.4	9.1	6.1
6/20/2011	2350.5	1.5	0.0	4.9	44.5	3.0	1209.5	214.1	6.3	9.9	8.9	886.6	8.9	65.3
6/21/2011	2629.9	0.7	0.0	4.9	44.5	3.0	1385.3	229.7	6.3	9.9	8.9	916.4	9.2	122.9
6/22/2011	2771.1	0.4	0.0	5.9	44.5	3.0	1444.6	238.3	6.3	9.9	8.9	1043.3	10.4	69.9
6/23/2011	2830.4	1.5	0.0	6.6	44.5	3.0	1440.1	242.9	6.3	9.9	8.9	1152.4	11.5	21.1
6/24/2011	2777.8	1.8	0.0	6.9	44.5	3.0	1410.5	240.9	6.3	9.9	8.9	1168.3	11.7	-15.9
6/25/2011	2741.3	1.0	0.0	7.4	44.5	3.0	1335.9	238.3	6.3	9.9	8.9	1192.1	11.9	0.8
6/26/2011	2797.3	0.9	0.0	7.4	44.5	3.0	1435.7	240.6	6.3	9.9	8.9	1104.8	11.0	42.3
6/27/2011	2847.1	3.7	0.0	7.4	44.5	3.0	1534.4	243.7	6.3	9.9	8.9	1067.1	10.7	31.0
6/28/2011	2819.0	2.6	0.0	7.3	44.5	3.0	1593.7	242.3	6.3	9.9	8.9	997.7	10.0	13.5
6/29/2011	2888.5	4.7	0.0	7.5	44.5	3.0	1548.6	244.7	6.3	9.9	8.9	1065.1	10.7	60.6
6/30/2011	3036.4	2.8	0.0	8.0	44.5	3.0	1613.9	253.3	6.3	9.9	8.9	1138.5	11.4	59.2
7/1/2011	3072.9	1.5	0.0	8.4	44.5	3.0	1594.2	255.8	6.3	7.3	8.9	1231.7	12.3	21.1
7/2/2011	3062.6	4.9	0.0	8.6	44.5	3.0	1558.7	255.6	6.3	7.3	8.9	1271.4	12.7	10.3
7/3/2011	3035.4	1.2	0.0	9.0	44.5	3.0	1523.6	254.2	6.3	7.3	8.9	1285.3	12.9	2.4
7/4/2011	2985.8	2.1	0.0	9.8	44.5	3.0	1503.6	252.6	6.3	7.3	8.9	1283.3	12.8	-22.1
7/5/2011	2875.6	4.9	0.0	10.5	44.5	3.0	1381.5	246.3	6.3	7.3	8.9	1307.1	13.1	-23.4
7/6/2011	2694.7	1.3	0.0	10.4	44.5	3.0	1318.2	239.6	6.3	7.3	8.9	1275.4	12.8	-105.9
7/7/2011	2369.4	1.8	0.0	10.9	44.5	3.0	1399.7	220.5	6.3	7.3	8.9	884.6	8.8	-98.9
7/8/2011	1964.4	2.2	0.0	10.3	44.5	3.0	1456.8	196.6	6.3	7.3	8.9	478.0	4.8	-129.4
7/9/2011	1844.5	6.2	0.0	10.7	44.5	3.0	1231.8	186.6	6.3	7.3	8.9	497.9	5.0	-29.8
7/10/2011	1730.3	4.8	0.0	10.6	44.5	3.0	1131.4	178.7	6.3	7.3	8.9	487.9	4.9	-27.2

Table F1-2: RGCP Channel Water Budget Equation Analysis Segment 2

2010-12 Study Period

(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	MODFLOW Groundwater Return Flow	Downstream Channel Outflow, below Mesilla Dam	Channel Seepage	MODFLOW Floodplain Recharge	Open Water Channel Evaporation	MODFLOW Riparian Evapo-transpiration	Diversions Authorized (Del Rio, Eastside, & Westside)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
7/11/2011	1733.3	3.0	0.0	10.6	44.5	3.0	1117.9	177.4	6.3	7.3	8.9	446.3	4.5	30.4
7/12/2011	1739.8	1.8	0.0	10.0	44.5	3.0	1187.5	177.8	6.3	7.3	8.9	380.8	3.8	30.5
7/13/2011	1745.7	2.1	0.0	8.8	44.5	3.0	1202.9	178.2	6.3	7.3	8.9	372.9	3.7	27.6
7/14/2011	1742.2	1.6	0.0	8.9	44.5	3.0	1220.6	178.5	6.3	7.3	8.9	361.0	3.6	17.7
7/15/2011	1601.6	3.5	0.0	8.8	44.5	3.0	1152.7	170.5	6.3	7.3	8.9	361.0	3.6	-45.3
7/16/2011	1608.0	2.0	0.0	8.4	44.5	3.0	1080.3	168.5	6.3	7.3	8.9	361.0	3.6	33.6
7/17/2011	1726.1	6.5	0.0	8.3	44.5	3.0	1163.3	175.4	6.3	7.3	8.9	337.2	3.4	90.1
7/18/2011	1738.9	1.9	0.0	10.6	44.5	3.0	1289.1	177.4	6.3	7.3	8.9	271.7	2.7	38.3
7/19/2011	1899.5	2.7	0.0	16.2	44.5	3.0	1436.4	186.1	6.3	7.3	8.9	204.3	2.0	116.6
7/20/2011	2097.3	2.6	0.0	17.5	44.5	3.0	1595.8	199.3	6.3	7.3	8.9	236.0	2.4	111.4
7/21/2011	2084.5	5.0	0.0	22.3	44.5	3.0	1626.6	201.1	6.3	7.3	8.9	295.5	3.0	13.6
7/22/2011	1958.3	2.1	0.0	26.1	44.5	3.0	1548.2	194.4	6.3	7.3	8.9	303.5	3.0	-34.6
7/23/2011	1869.9	4.7	0.0	25.1	44.5	3.0	1442.6	187.9	6.3	7.3	8.9	303.5	3.0	-9.3
7/24/2011	1913.2	1.6	0.0	24.3	44.5	3.0	1349.1	189.4	6.3	7.3	8.9	384.8	3.8	40.7
7/25/2011	1910.9	2.0	0.0	24.0	44.5	3.0	1343.9	189.8	6.3	7.3	8.9	406.6	4.1	21.6
7/26/2011	1912.6	4.7	0.0	23.2	44.5	3.0	1335.0	189.5	6.3	7.3	8.9	410.6	4.1	30.4
7/27/2011	1978.9	2.0	0.0	22.7	44.5	3.0	1375.9	193.1	6.3	7.3	8.9	402.6	4.0	57.0
7/28/2011	1992.0	3.3	0.0	22.3	44.5	3.0	1418.4	196.0	6.3	7.3	8.9	418.5	4.2	9.6
7/29/2011	1599.5	6.9	0.0	21.9	44.5	3.0	1250.9	173.9	6.3	7.3	8.9	384.8	3.8	-156.2
7/30/2011	1696.7	2.9	0.0	22.3	44.5	3.0	1018.5	173.9	6.3	7.3	8.9	474.0	4.7	80.4
7/31/2011	1738.0	1.2	0.0	22.7	44.5	3.0	973.9	177.9	6.3	7.3	8.9	601.0	6.0	34.1
8/1/2011	1734.2	6.9	0.0	22.8	44.5	3.0	1552.8	177.9	6.3	6.9	8.9	0.0	0.0	58.7
8/2/2011	1831.7	6.6	0.0	22.5	44.5	3.0	1626.7	183.5	6.3	6.9	8.9	0.0	0.0	76.1
8/3/2011	1775.4	4.8	0.0	21.3	44.5	3.0	1649.1	181.9	6.3	6.9	8.9	0.0	0.0	-4.0
8/4/2011	1634.1	1.9	0.0	20.4	44.5	3.0	1551.2	173.2	6.3	6.9	8.9	0.0	0.0	-42.6
8/5/2011	1616.7	4.2	0.0	19.9	44.5	3.0	1472.2	170.2	6.3	6.9	8.9	0.0	0.0	23.8
8/6/2011	1656.0	3.7	0.0	19.4	44.5	3.0	1481.6	172.0	6.3	6.9	8.9	0.0	0.0	51.0
8/7/2011	1718.0	4.7	0.0	18.9	44.5	3.0	1531.8	176.2	6.3	6.9	8.9	0.0	0.0	59.1
8/8/2011	1700.2	1.4	0.0	18.4	44.5	3.0	1553.6	176.0	6.3	6.9	8.9	0.0	0.0	15.9
8/9/2011	1680.5	5.1	0.0	18.4	44.5	3.0	1534.8	174.6	6.3	6.9	8.9	0.0	0.0	19.9
8/10/2011	1663.0	3.6	0.0	18.5	44.5	3.0	1516.1	173.3	6.3	6.9	8.9	0.0	0.0	21.0
8/11/2011	1697.7	5.1	0.0	19.0	44.5	3.0	1522.7	174.9	6.3	6.9	8.9	0.0	0.0	49.6
8/12/2011	1749.8	6.6	0.0	19.3	44.5	3.0	1565.2	178.3	6.3	6.9	8.9	0.0	0.0	57.6
8/13/2011	1780.7	4.3	0.0	18.5	44.5	3.0	1604.2	180.6	6.3	6.9	8.9	0.0	0.0	44.2
8/14/2011	1808.0	10.7	0.0	16.8	44.5	3.0	1631.4	182.5	6.3	6.9	8.9	0.0	0.0	47.0
8/15/2011	1791.7	6.8	0.0	17.6	44.5	3.0	1636.2	182.0	6.3	6.9	8.9	0.0	0.0	23.3
8/16/2011	1777.7	2.6	0.0	16.4	44.5	3.0	1619.9	180.9	6.3	6.9	8.9	0.0	0.0	21.3
8/17/2011	1793.1	4.5	0.0	16.6	44.5	3.0	1620.0	181.5	6.3	6.9	8.9	0.0	0.0	38.2
8/18/2011	1819.6	3.3	0.0	15.9	44.5	3.0	1640.8	183.2	6.3	6.9	8.9	0.0	0.0	40.1
8/19/2011	1813.0	3.4	0.0	15.9	44.5	3.0	1650.0	183.2	6.3	6.9	8.9	0.0	0.0	24.5
8/20/2011	1807.4	8.3	0.0	15.9	44.5	3.0	1643.7	182.8	6.3	6.9	8.9	0.0	0.0	30.5
8/21/2011	1801.0	1.8	0.0	15.9	44.5	3.0	1638.2	182.4	6.3	6.9	8.9	0.0	0.0	23.5
8/22/2011	1793.5	7.1	0.0	16.4	44.5	3.0	1631.9	181.9	6.3	6.9	8.9	0.0	0.0	28.6
8/23/2011	1787.7	4.9	0.0	15.9	44.5	3.0	1624.9	181.5	6.3	6.9	8.9	0.0	0.0	27.6
8/24/2011	1807.1	3.7	0.0	15.9	44.5	3.0	1627.1	182.1	6.3	6.9	8.9	0.0	0.0	42.8
8/25/2011	1929.3	5.8	0.0	15.9	44.5	3.0	1698.3	189.1	6.3	6.9	8.9	0.0	0.0	89.0
8/26/2011	1975.8	2.8	0.0	15.9	44.5	3.0	1783.6	193.4	6.3	6.9	8.9	0.0	0.0	42.9
8/27/2011	1880.0	5.8	0.0	15.9	44.5	3.0	1754.7	188.8	6.3	6.9	8.9	0.0	0.0	-16.3
8/28/2011	1797.7	2.8	0.0	15.9	44.5	3.0	1668.9	183.1	6.3	6.9	8.9	0.0	0.0	-10.1
8/29/2011	1787.2	1.2	0.0	15.9	44.5	3.0	1626.2	181.5	6.3	6.9	8.9	0.0	0.0	22.0
8/30/2011	1759.9	4.9	0.0	15.9	44.5	3.0	1618.3	180.7	6.3	6.9	8.9	0.0	0.0	7.1

Table F1-2: RGCP Channel Water Budget Equation Analysis Segment 2

2010-12 Study Period

(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	MODFLOW Groundwater Return Flow	Downstream Channel Outflow, below Mesilla Dam	Channel Seepage	MODFLOW Floodplain Recharge	Open Water Channel Evaporation	MODFLOW Riparian Evapo-transpiration	Diversions Authorized (Del Rio, Eastside, & Westside)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
8/31/2011	1505.6	3.8	0.0	15.9	44.5	3.0	1487.2	166.2	6.3	6.9	8.9	0.0	0.0	-102.7
9/1/2011	1336.5	0.9	0.0	7.6	44.5	3.0	1283.2	152.0	6.3	5.5	8.9	0.0	0.0	-63.4
9/2/2011	1634.7	4.8	0.0	0.0	44.5	3.0	1284.1	165.1	6.3	5.5	8.9	0.0	0.0	217.1
9/3/2011	1820.8	2.8	0.0	0.0	44.5	3.0	1555.6	180.9	6.3	5.5	8.9	0.0	0.0	113.9
9/4/2011	1834.9	4.8	0.0	0.0	44.5	3.0	1646.8	183.8	6.3	5.5	8.9	0.0	0.0	35.9
9/5/2011	1840.8	4.1	0.0	0.0	44.5	3.0	1653.8	184.2	6.3	5.5	8.9	0.0	0.0	33.6
9/6/2011	1856.3	5.3	0.0	0.0	44.5	3.0	1663.8	185.1	6.3	5.5	8.9	0.0	0.0	39.4
9/7/2011	1871.3	5.6	0.0	0.0	44.5	3.0	1678.2	186.1	6.3	5.5	8.9	0.0	0.0	39.4
9/8/2011	1884.2	2.0	0.0	0.0	44.5	3.0	1691.6	187.0	6.3	5.5	8.9	0.0	0.0	34.5
9/9/2011	1890.6	2.1	0.0	0.0	44.5	3.0	1701.8	187.6	6.3	5.5	8.9	0.0	0.0	30.1
9/10/2011	1791.2	2.4	0.0	0.0	44.5	3.0	1693.4	185.2	6.3	5.5	8.9	0.0	0.0	-58.2
9/11/2011	963.6	3.2	274.4	0.0	44.5	3.0	1282.5	135.8	6.3	5.5	8.9	0.0	0.0	-150.3
9/12/2011	588.5	5.8	86.5	0.0	44.5	3.0	719.5	90.5	6.3	5.5	8.9	0.0	0.0	-102.4
9/13/2011	10.4	3.0	44.6	0.0	44.5	3.0	99.5	10.4	6.3	5.5	8.9	0.0	0.0	-25.1
9/14/2011	6.1	3.3	0.0	0.0	44.5	3.0	17.3	6.1	6.3	5.5	8.9	0.0	0.0	12.8
9/15/2011	6.1	2.1	0.0	0.0	44.5	3.0	11.1	6.1	6.3	5.5	8.9	0.0	0.0	17.8
9/16/2011	6.0	3.7	0.0	0.0	44.5	3.0	11.0	6.0	6.3	5.5	8.9	0.0	0.0	19.4
9/17/2011	6.1	1.6	0.0	0.0	44.5	3.0	10.9	6.1	6.3	5.5	8.9	0.0	0.0	17.4
9/18/2011	6.0	3.1	0.0	0.0	44.5	3.0	11.0	6.0	6.3	5.5	8.9	0.0	0.0	18.8
9/19/2011	6.1	3.0	0.0	3.5	44.5	3.0	11.7	6.1	6.3	5.5	8.9	0.0	0.0	21.5
9/20/2011	6.1	3.3	0.0	6.6	44.5	3.0	14.8	6.1	6.3	5.5	8.9	0.0	0.0	21.9
9/21/2011	6.1	0.5	0.0	5.0	44.5	3.0	16.5	6.1	6.3	5.5	8.9	0.0	0.0	15.8
9/22/2011	6.0	3.7	0.0	2.2	44.5	3.0	14.6	6.0	6.3	5.5	8.9	0.0	0.0	18.1
9/23/2011	6.1	3.8	0.0	0.3	44.5	3.0	12.7	6.1	6.3	5.5	8.9	0.0	0.0	18.2
9/24/2011	6.1	1.4	0.0	0.0	44.5	3.0	11.1	6.1	6.3	5.5	8.9	0.0	0.0	17.1
9/25/2011	6.1	3.7	0.0	0.0	44.5	3.0	10.8	6.1	6.3	5.5	8.9	0.0	0.0	19.6
9/26/2011	6.1	1.2	0.0	0.0	44.5	3.0	10.7	6.1	6.3	5.5	8.9	0.0	0.0	17.3
9/27/2011	6.1	0.3	0.0	0.0	44.5	3.0	10.8	6.1	6.3	5.5	8.9	0.0	0.0	16.4
9/28/2011	6.1	0.2	0.0	0.0	44.5	3.0	10.8	6.1	6.3	5.5	8.9	0.0	0.0	16.3
9/29/2011	6.0	1.6	0.0	0.0	44.5	3.0	10.8	6.0	6.3	5.5	8.9	0.0	0.0	17.6
9/30/2011	6.0	1.6	0.0	0.0	44.5	3.0	10.7	6.0	6.3	5.5	8.9	0.0	0.0	17.7
10/1/2011	6.1	2.6	0.0	0.0	44.5	3.0	10.8	6.1	6.3	0.0	8.9	0.0	0.0	24.2
10/2/2011	6.0	0.7	0.0	0.0	44.5	3.0	10.8	6.0	6.3	0.0	8.9	0.0	0.0	22.3
10/3/2011	6.0	1.9	0.0	0.0	44.5	3.0	10.8	6.0	6.3	0.0	8.9	0.0	0.0	23.5
10/4/2011	6.1	2.0	0.0	0.0	44.5	3.0	10.7	6.1	6.3	0.0	8.9	0.0	0.0	23.7
10/5/2011	6.0	1.8	0.0	0.0	44.5	3.0	10.7	6.0	6.3	0.0	8.9	0.0	0.0	23.4
10/6/2011	6.0	0.4	0.0	0.0	44.5	3.0	10.7	6.0	6.3	0.0	8.9	0.0	0.0	22.1
10/7/2011	6.1	0.5	0.0	0.0	44.5	3.0	10.8	6.1	6.3	0.0	8.9	0.0	0.0	22.2
10/8/2011	6.1	1.1	0.0	0.0	44.5	3.0	10.7	6.1	6.3	0.0	8.9	0.0	0.0	22.8
10/9/2011	6.0	1.2	0.0	0.0	44.5	3.0	10.7	6.0	6.3	0.0	8.9	0.0	0.0	22.9
10/10/2011	6.1	0.8	0.0	0.0	44.5	3.0	10.7	6.1	6.3	0.0	8.9	0.0	0.0	22.5
10/11/2011	6.0	2.7	0.0	0.0	44.5	3.0	10.7	6.0	6.3	0.0	8.9	0.0	0.0	24.3
10/12/2011	6.1	0.6	0.0	0.0	44.5	3.0	10.7	6.1	6.3	0.0	8.9	0.0	0.0	22.2
10/13/2011	6.0	1.7	0.0	0.0	44.5	3.0	10.7	6.0	6.3	0.0	8.9	0.0	0.0	23.4
10/14/2011	6.0	1.2	0.0	0.0	44.5	3.0	10.7	6.0	6.3	0.0	8.9	0.0	0.0	22.8
10/15/2011	6.1	2.1	0.0	0.0	44.5	3.0	10.7	6.1	6.3	0.0	8.9	0.0	0.0	23.8
10/16/2011	6.1	0.5	0.0	0.0	44.5	3.0	10.7	6.1	6.3	0.0	8.9	0.0	0.0	22.2
10/17/2011	6.1	5.0	0.0	0.0	44.5	3.0	10.8	6.1	6.3	0.0	8.9	0.0	0.0	26.6
10/18/2011	6.0	1.4	0.0	0.0	44.5	3.0	10.7	6.0	6.3	0.0	8.9	0.0	0.0	23.1
10/19/2011	6.1	3.2	0.0	0.0	44.5	3.0	10.8	6.1	6.3	0.0	8.9	0.0	0.0	24.8
10/20/2011	6.0	3.8	0.0	0.0	44.5	3.0	10.7	6.0	6.3	0.0	8.9	0.0	0.0	25.5

Table F1-2: RGCP Channel Water Budget Equation Analysis Segment 2

2010-12 Study Period

(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	MODFLOW Groundwater Return Flow	Downstream Channel Outflow, below Mesilla Dam	Channel Seepage	MODFLOW Floodplain Recharge	Open Water Channel Evaporation	MODFLOW Riparian Evapo-transpiration	Diversions Authorized (Del Rio, Eastside, & Westside)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
10/21/2011	6.1	2.8	0.0	0.0	44.5	3.0	10.8	6.1	6.3	0.0	8.9	0.0	0.0	24.4
10/22/2011	6.0	2.6	0.0	0.0	44.5	3.0	10.7	6.0	6.3	0.0	8.9	0.0	0.0	24.3
10/23/2011	6.1	2.6	0.0	0.0	44.5	3.0	10.6	6.1	6.3	0.0	8.9	0.0	0.0	24.4
10/24/2011	6.1	2.8	0.0	0.0	44.5	3.0	10.8	6.1	6.3	0.0	8.9	0.0	0.0	24.4
10/25/2011	6.0	1.6	0.0	0.0	44.5	3.0	10.7	6.0	6.3	0.0	8.9	0.0	0.0	23.3
10/26/2011	6.0	2.8	0.0	0.0	44.5	3.0	10.7	6.0	6.3	0.0	8.9	0.0	0.0	24.4
10/27/2011	6.1	2.2	0.0	0.1	44.5	3.0	10.7	6.1	6.3	0.0	8.9	0.0	0.0	23.8
10/28/2011	6.1	3.2	0.0	0.1	44.5	3.0	10.8	6.1	6.3	0.0	8.9	0.0	0.0	24.8
10/29/2011	6.0	1.4	0.0	0.0	44.5	3.0	10.8	6.0	6.3	0.0	8.9	0.0	0.0	23.0
10/30/2011	6.0	1.2	0.0	0.0	44.5	3.0	10.6	6.0	6.3	0.0	8.9	0.0	0.0	22.9
10/31/2011	6.1	0.7	0.0	0.0	44.5	3.0	10.8	6.1	6.3	0.0	8.9	0.0	0.0	22.3
11/1/2011	6.1	1.8	0.0	0.0	44.5	6.5	10.8	6.1	0.1	0.0	1.4	0.0	0.0	40.6
11/2/2011	6.0	0.5	0.0	0.0	44.5	6.5	10.8	6.0	0.1	0.0	1.4	0.0	0.0	39.3
11/3/2011	6.1	1.9	0.0	0.0	44.5	6.5	10.8	6.1	0.1	0.0	1.4	0.0	0.0	40.7
11/4/2011	6.1	0.5	0.0	0.1	44.5	6.5	10.9	6.1	0.1	0.0	1.4	0.0	0.0	39.2
11/5/2011	6.0	2.4	0.0	0.0	44.5	6.5	11.0	6.0	0.1	0.0	1.4	0.0	0.0	41.0
11/6/2011	6.1	0.4	0.0	0.0	44.5	6.5	11.1	6.1	0.1	0.0	1.4	0.0	0.0	38.9
11/7/2011	6.1	1.5	0.0	0.0	44.5	6.5	11.1	6.1	0.1	0.0	1.4	0.0	0.0	39.9
11/8/2011	6.1	1.4	0.0	0.0	44.5	6.5	11.2	6.1	0.1	0.0	1.4	0.0	0.0	39.7
11/9/2011	6.0	0.8	0.0	0.0	44.5	6.5	11.3	6.0	0.1	0.0	1.4	0.0	0.0	39.1
11/10/2011	6.1	0.2	0.0	0.0	44.5	6.5	11.3	6.1	0.1	0.0	1.4	0.0	0.0	38.4
11/11/2011	6.2	1.2	0.0	0.0	44.5	6.5	11.4	6.2	0.1	0.0	1.4	0.0	0.0	39.3
11/12/2011	6.1	0.7	0.0	0.0	44.5	6.5	11.7	6.1	0.1	0.0	1.4	0.0	0.0	38.6
11/13/2011	6.1	1.1	0.0	0.1	44.5	6.5	11.7	6.1	0.1	0.0	1.4	0.0	0.0	39.0
11/14/2011	6.0	4.9	0.0	0.1	44.5	6.5	11.8	6.0	0.1	0.0	1.4	0.0	0.0	42.7
11/15/2011	6.0	0.9	0.0	0.1	44.5	6.5	11.9	6.0	0.1	0.0	1.4	0.0	0.0	38.7
11/16/2011	6.1	1.6	0.0	0.0	44.5	6.5	11.8	6.1	0.1	0.0	1.4	0.0	0.0	39.4
11/17/2011	6.1	0.2	0.0	0.0	44.5	6.5	11.7	6.1	0.1	0.0	1.4	0.0	0.0	38.0
11/18/2011	6.0	0.2	0.0	0.0	44.5	6.5	11.9	6.0	0.1	0.0	1.4	0.0	0.0	37.9
11/19/2011	6.1	0.7	0.0	0.0	44.5	6.5	11.7	6.1	0.1	0.0	1.4	0.0	0.0	38.6
11/20/2011	6.0	0.1	0.0	0.0	44.5	6.5	11.8	6.0	0.1	0.0	1.4	0.0	0.0	37.8
11/21/2011	6.1	0.1	0.0	0.1	44.5	6.5	11.8	6.1	0.1	0.0	1.4	0.0	0.0	37.9
11/22/2011	6.1	0.3	0.0	0.1	44.5	6.5	11.9	6.1	0.1	0.0	1.4	0.0	0.0	38.1
11/23/2011	6.1	0.3	0.0	0.1	44.5	6.5	11.9	6.1	0.1	0.0	1.4	0.0	0.0	38.1
11/24/2011	6.1	1.0	0.0	0.1	44.5	6.5	11.9	6.1	0.1	0.0	1.4	0.0	0.0	38.7
11/25/2011	6.0	0.1	0.0	0.1	44.5	6.5	11.9	6.0	0.1	0.0	1.4	0.0	0.0	37.8
11/26/2011	6.1	0.7	0.0	0.1	44.5	6.5	11.9	6.1	0.1	0.0	1.4	0.0	0.0	38.4
11/27/2011	6.1	2.2	0.0	0.1	44.5	6.5	11.9	6.1	0.1	0.0	1.4	0.0	0.0	39.9
11/28/2011	6.1	1.4	0.0	0.1	44.5	6.5	11.9	6.1	0.1	0.0	1.4	0.0	0.0	39.1
11/29/2011	6.1	1.1	0.0	0.1	44.5	6.5	11.9	6.1	0.1	0.0	1.4	0.0	0.0	38.8
11/30/2011	6.1	0.5	0.0	0.1	44.5	6.5	11.9	6.1	0.1	0.0	1.4	0.0	0.0	38.2
12/1/2011	6.0	1.4	0.0	0.1	44.5	6.5	11.9	6.0	0.1	0.0	1.4	0.0	0.0	39.1
12/2/2011	6.1	0.2	0.0	0.1	44.5	6.5	11.9	6.1	0.1	0.0	1.4	0.0	0.0	38.0
12/3/2011	6.1	2.1	0.0	0.1	44.5	6.5	11.9	6.1	0.1	0.0	1.4	0.0	0.0	39.8
12/4/2011	6.0	0.9	0.0	0.1	44.5	6.5	11.9	6.0	0.1	0.0	1.4	0.0	0.0	38.6
12/5/2011	6.1	2.3	0.0	0.1	44.5	6.5	11.8	6.1	0.1	0.0	1.4	0.0	0.0	40.1
12/6/2011	6.1	0.9	0.0	0.0	44.5	6.5	11.9	6.1	0.1	0.0	1.4	0.0	0.0	38.5
12/7/2011	6.0	0.9	0.0	0.1	44.5	6.5	11.9	6.0	0.1	0.0	1.4	0.0	0.0	38.7
12/8/2011	6.1	1.8	0.0	0.1	44.5	6.5	11.9	6.1	0.1	0.0	1.4	0.0	0.0	39.5
12/9/2011	6.1	1.7	0.0	0.1	44.5	6.5	12.0	6.1	0.1	0.0	1.4	0.0	0.0	39.3
12/10/2011	6.0	1.6	0.0	0.1	44.5	6.5	12.0	6.0	0.1	0.0	1.4	0.0	0.0	39.2

Table F1-2: RGCP Channel Water Budget Equation Analysis Segment 2

2010-12 Study Period

(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	MODFLOW Groundwater Return Flow	Downstream Channel Outflow, below Mesilla Dam	Channel Seepage	MODFLOW Floodplain Recharge	Open Water Channel Evaporation	MODFLOW Riparian Evapo-transpiration	Diversions Authorized (Del Rio, Eastside, & Westside)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
12/11/2011	6.0	1.8	0.0	0.1	44.5	6.5	11.9	6.0	0.1	0.0	1.4	0.0	0.0	39.5
12/12/2011	6.1	0.7	0.0	0.1	44.5	6.5	12.0	6.1	0.1	0.0	1.4	0.0	0.0	38.3
12/13/2011	6.1	1.6	0.0	0.1	44.5	6.5	11.9	6.1	0.1	0.0	1.4	0.0	0.0	39.3
12/14/2011	6.1	1.8	0.0	0.1	44.5	6.5	12.0	6.1	0.1	0.0	1.4	0.0	0.0	39.5
12/15/2011	6.0	3.2	0.0	0.1	44.5	6.5	11.9	6.0	0.1	0.0	1.4	0.0	0.0	40.9
12/16/2011	6.1	0.5	0.0	0.1	44.5	6.5	12.0	6.1	0.1	0.0	1.4	0.0	0.0	38.1
12/17/2011	6.1	1.6	0.0	0.1	44.5	6.5	11.9	6.1	0.1	0.0	1.4	0.0	0.0	39.2
12/18/2011	6.1	2.2	0.0	0.1	44.5	6.5	11.9	6.1	0.1	0.0	1.4	0.0	0.0	40.0
12/19/2011	6.1	1.1	0.0	0.1	44.5	6.5	12.0	6.1	0.1	0.0	1.4	0.0	0.0	38.7
12/20/2011	6.1	1.9	0.0	0.1	44.5	6.5	11.9	6.1	0.1	0.0	1.4	0.0	0.0	39.6
12/21/2011	6.2	0.2	0.0	0.1	44.5	6.5	12.0	6.2	0.1	0.0	1.4	0.0	0.0	37.9
12/22/2011	6.1	2.2	0.0	0.1	44.5	6.5	12.0	6.1	0.1	0.0	1.4	0.0	0.0	39.9
12/23/2011	6.1	1.0	0.0	0.1	44.5	6.5	11.9	6.1	0.1	0.0	1.4	0.0	0.0	38.8
12/24/2011	6.0	1.2	0.0	0.1	44.5	6.5	12.0	6.0	0.1	0.0	1.4	0.0	0.0	38.9
12/25/2011	6.1	1.2	0.0	0.2	44.5	6.5	11.9	6.1	0.1	0.0	1.4	0.0	0.0	39.0
12/26/2011	6.1	2.8	0.0	0.2	44.5	6.5	12.0	6.1	0.1	0.0	1.4	0.0	0.0	40.6
12/27/2011	6.0	2.0	0.0	0.4	44.5	6.5	11.9	6.0	0.1	0.0	1.4	0.0	0.0	39.9
12/28/2011	6.2	1.0	0.0	0.8	44.5	6.5	12.2	6.2	0.1	0.0	1.4	0.0	0.0	39.2
12/29/2011	6.2	2.4	0.0	1.0	44.5	6.5	12.6	6.2	0.1	0.0	1.4	0.0	0.0	40.4
12/30/2011	6.1	2.0	0.0	0.2	44.5	6.5	12.5	6.1	0.1	0.0	1.4	0.0	0.0	39.3
12/31/2011	6.1	0.3	0.0	0.3	44.5	6.5	12.0	6.1	0.1	0.0	1.4	0.0	0.0	38.1
1/1/2012	6.2	1.4	0.0	0.1	44.5	6.5	12.0	6.2	0.1	0.0	1.4	0.0	0.0	39.0
1/2/2012	6.2	1.2	0.0	0.1	44.5	6.5	11.8	6.2	0.1	0.0	1.4	0.0	0.0	39.0
1/3/2012	6.1	0.5	0.0	0.4	44.5	6.5	11.9	6.1	0.1	0.0	1.4	0.0	0.0	38.6
1/4/2012	6.1	1.3	0.0	0.1	44.5	6.5	12.0	6.1	0.1	0.0	1.4	0.0	0.0	38.9
1/5/2012	6.2	0.5	0.0	0.1	44.5	6.5	11.8	6.2	0.1	0.0	1.4	0.0	0.0	38.3
1/6/2012	6.1	1.6	0.0	0.1	44.5	6.5	11.8	6.1	0.1	0.0	1.4	0.0	0.0	39.5
1/7/2012	6.2	1.9	0.0	0.1	44.5	6.5	11.7	6.2	0.1	0.0	1.4	0.0	0.0	39.8
1/8/2012	6.1	1.2	0.0	0.1	44.5	6.5	11.8	6.1	0.1	0.0	1.4	0.0	0.0	39.0
1/9/2012	6.1	1.2	0.0	0.1	44.5	6.5	11.8	6.1	0.1	0.0	1.4	0.0	0.0	38.9
1/10/2012	6.1	0.9	0.0	0.1	44.5	6.5	11.8	6.1	0.1	0.0	1.4	0.0	0.0	38.7
1/11/2012	6.1	2.0	0.0	0.1	44.5	6.5	11.8	6.1	0.1	0.0	1.4	0.0	0.0	39.9
1/12/2012	6.1	0.7	0.0	0.1	44.5	6.5	11.8	6.1	0.1	0.0	1.4	0.0	0.0	38.5
1/13/2012	6.2	2.2	0.0	0.2	44.5	6.5	11.8	6.2	0.1	0.0	1.4	0.0	0.0	40.1
1/14/2012	6.2	0.3	0.0	1.1	44.5	6.5	12.0	6.2	0.1	0.0	1.4	0.0	0.0	38.8
1/15/2012	6.1	1.1	0.0	0.2	44.5	6.5	12.4	6.1	0.1	0.0	1.4	0.0	0.0	38.4
1/16/2012	6.1	0.2	0.0	0.1	44.5	6.5	11.8	6.1	0.1	0.0	1.4	0.0	0.0	38.1
1/17/2012	6.2	0.4	0.0	0.1	44.5	6.5	11.7	6.2	0.1	0.0	1.4	0.0	0.0	38.3
1/18/2012	6.1	1.6	0.0	0.1	44.5	6.5	11.8	6.1	0.1	0.0	1.4	0.0	0.0	39.5
1/19/2012	6.2	1.2	0.0	0.1	44.5	6.5	11.7	6.2	0.1	0.0	1.4	0.0	0.0	39.1
1/20/2012	6.1	1.4	0.0	0.1	44.5	6.5	11.7	6.1	0.1	0.0	1.4	0.0	0.0	39.3
1/21/2012	6.1	1.0	0.0	0.1	44.5	6.5	11.7	6.1	0.1	0.0	1.4	0.0	0.0	38.9
1/22/2012	6.1	1.2	0.0	0.1	44.5	6.5	11.7	6.1	0.1	0.0	1.4	0.0	0.0	39.2
1/23/2012	6.2	0.1	0.0	0.1	44.5	6.5	11.6	6.2	0.1	0.0	1.4	0.0	0.0	38.2
1/24/2012	6.2	1.3	0.0	0.1	44.5	6.5	11.7	6.2	0.1	0.0	1.4	0.0	0.0	39.3
1/25/2012	6.0	1.2	0.0	0.1	44.5	6.5	11.6	6.0	0.1	0.0	1.4	0.0	0.0	39.2
1/26/2012	6.1	0.5	0.0	0.1	44.5	6.5	11.6	6.1	0.1	0.0	1.4	0.0	0.0	38.5
1/27/2012	6.0	0.9	0.0	0.1	44.5	6.5	11.7	6.0	0.1	0.0	1.4	0.0	0.0	38.9
1/28/2012	6.1	0.6	0.0	0.1	44.5	6.5	11.6	6.1	0.1	0.0	1.4	0.0	0.0	38.6
1/29/2012	6.1	0.3	0.0	0.1	44.5	6.5	11.6	6.1	0.1	0.0	1.4	0.0	0.0	38.4
1/30/2012	6.1	0.7	0.0	0.1	44.5	6.5	11.6	6.1	0.1	0.0	1.4	0.0	0.0	38.7



Table F1-2: RGCP Channel Water Budget Equation Analysis Segment 2

2010-12 Study Period

(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	MODFLOW Groundwater Return Flow	Downstream Channel Outflow, below Mesilla Dam	Channel Seepage	MODFLOW Floodplain Recharge	Open Water Channel Evaporation	MODFLOW Riparian Evapo- transpiration	Diversions Authorized (Del Rio, Eastside, & Westside)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
1/31/2012	6.2	1.2	0.0	0.1	44.5	6.5	11.6	6.2	0.1	0.0	1.4	0.0	0.0	39.2
2/1/2012	6.1	0.6	0.0	0.1	44.5	6.5	11.6	6.1	0.1	0.0	1.4	0.0	0.0	38.7
2/2/2012	6.2	0.3	0.0	0.1	44.5	6.5	11.6	6.2	0.1	0.0	1.4	0.0	0.0	38.3
2/3/2012	6.1	1.0	0.0	0.1	44.5	6.5	11.5	6.1	0.1	0.0	1.4	0.0	0.0	39.1
2/4/2012	6.3	1.2	0.0	0.1	44.5	6.5	11.5	6.3	0.1	0.0	1.4	0.0	0.0	39.3
2/5/2012	6.1	1.6	0.0	0.1	44.5	6.5	11.5	6.1	0.1	0.0	1.4	0.0	0.0	39.7
2/6/2012	6.1	1.0	0.0	0.1	44.5	6.5	11.5	6.1	0.1	0.0	1.4	0.0	0.0	39.2
2/7/2012	6.0	1.1	0.0	0.1	44.5	6.5	11.5	6.0	0.1	0.0	1.4	0.0	0.0	39.3
2/8/2012	6.1	0.9	0.0	0.1	44.5	6.5	11.5	6.1	0.1	0.0	1.4	0.0	0.0	39.1
2/9/2012	6.0	1.4	0.0	0.1	44.5	6.5	11.4	6.0	0.1	0.0	1.4	0.0	0.0	39.6
2/10/2012	6.0	0.3	0.0	0.1	44.5	6.5	11.4	6.0	0.1	0.0	1.4	0.0	0.0	38.6
2/11/2012	6.0	0.5	0.0	0.1	44.5	6.5	11.4	6.0	0.1	0.0	1.4	0.0	0.0	38.8
2/12/2012	6.1	3.1	0.0	0.1	44.5	6.5	11.4	6.1	0.1	0.0	1.4	0.0	0.0	41.4
2/13/2012	6.1	0.8	0.0	0.1	44.5	6.5	11.4	6.1	0.1	0.0	1.4	0.0	0.0	39.1
2/14/2012	6.1	1.6	0.0	0.1	44.5	6.5	11.3	6.1	0.1	0.0	1.4	0.0	0.0	39.9
2/15/2012	6.1	0.6	0.0	0.1	44.5	6.5	11.3	6.1	0.1	0.0	1.4	0.0	0.0	39.0
2/16/2012	6.1	1.0	0.0	0.1	44.5	6.5	11.2	6.1	0.1	0.0	1.4	0.0	0.0	39.4
2/17/2012	6.1	1.3	0.0	0.1	44.5	6.5	11.3	6.1	0.1	0.0	1.4	0.0	0.0	39.7
2/18/2012	6.2	0.3	0.0	0.1	44.5	6.5	11.3	6.2	0.1	0.0	1.4	0.0	0.0	38.7
2/19/2012	6.0	0.6	0.0	0.1	44.5	6.5	11.2	6.0	0.1	0.0	1.4	0.0	0.0	39.1
2/20/2012	6.1	0.8	0.0	0.1	44.5	6.5	11.2	6.1	0.1	0.0	1.4	0.0	0.0	39.3
2/21/2012	6.1	2.2	0.0	0.1	44.5	6.5	11.1	6.1	0.1	0.0	1.4	0.0	0.0	40.7
2/22/2012	6.1	0.9	0.0	0.1	44.5	6.5	11.0	6.1	0.1	0.0	1.4	0.0	0.0	39.6
2/23/2012	6.1	0.1	0.0	0.1	44.5	6.5	11.0	6.1	0.1	0.0	1.4	0.0	0.0	38.8
2/24/2012	6.1	2.6	0.0	0.1	44.5	6.5	11.0	6.1	0.1	0.0	1.4	0.0	0.0	41.3
2/25/2012	6.1	0.5	0.0	0.1	44.5	6.5	11.0	6.1	0.1	0.0	1.4	0.0	0.0	39.2
2/26/2012	6.0	0.4	0.0	0.1	44.5	6.5	11.0	6.0	0.1	0.0	1.4	0.0	0.0	39.0
2/27/2012	6.1	0.1	0.0	0.1	44.5	6.5	10.9	6.1	0.1	0.0	1.4	0.0	0.0	38.8
2/28/2012	6.1	0.2	0.0	0.1	44.5	6.5	10.8	6.1	0.1	0.0	1.4	0.0	0.0	39.0
2/29/2012	6.1	0.0	0.0	0.1	44.5	6.5	10.8	6.1	0.1	0.0	1.4	0.0	0.0	38.8
3/1/2012	6.1	1.6	0.0	0.1	44.5	3.0	10.8	6.1	6.3	2.8	8.9	0.0	0.0	20.6
3/2/2012	6.1	1.1	0.0	0.1	44.5	3.0	10.8	6.1	6.3	2.8	8.9	0.0	0.0	20.0
3/3/2012	6.1	1.2	0.0	0.1	44.5	3.0	10.8	6.1	6.3	2.8	8.9	0.0	0.0	20.1
3/4/2012	6.1	0.8	0.0	0.1	44.5	3.0	10.8	6.1	6.3	2.8	8.9	0.0	0.0	19.7
3/5/2012	6.0	0.2	0.0	0.1	44.5	3.0	10.8	6.0	6.3	2.8	8.9	0.0	0.0	19.1
3/6/2012	6.1	0.2	0.0	0.1	44.5	3.0	10.8	6.1	6.3	2.8	8.9	0.0	0.0	19.1
3/7/2012	6.0	0.6	0.0	0.1	44.5	3.0	10.7	6.0	6.3	2.8	8.9	0.0	0.0	19.6
3/8/2012	6.0	0.4	0.0	0.1	44.5	3.0	10.8	6.0	6.3	2.8	8.9	0.0	0.0	19.3
3/9/2012	6.1	0.1	0.0	0.1	44.5	3.0	10.8	6.1	6.3	2.8	8.9	0.0	0.0	19.0
3/10/2012	6.1	0.9	0.0	0.1	44.5	3.0	10.8	6.1	6.3	2.8	8.9	0.0	0.0	19.8
3/11/2012	6.1	1.2	0.0	0.1	44.5	3.0	10.8	6.1	6.3	2.8	8.9	0.0	0.0	20.1
3/12/2012	6.1	1.1	0.0	0.1	44.5	3.0	10.8	6.1	6.3	2.8	8.9	0.0	0.0	19.9
3/13/2012	6.0	0.4	0.0	0.1	44.5	3.0	10.8	6.0	6.3	2.8	8.9	0.0	0.0	19.3
3/14/2012	6.0	0.4	0.0	0.1	44.5	3.0	10.8	6.0	6.3	2.8	8.9	0.0	0.0	19.3
3/15/2012	6.0	0.9	0.0	0.1	44.5	3.0	10.8	6.0	6.3	2.8	8.9	0.0	0.0	19.8
3/16/2012	6.1	0.0	0.0	0.1	44.5	3.0	10.7	6.1	6.3	2.8	8.9	0.0	0.0	19.0
3/17/2012	6.0	0.1	0.0	0.1	44.5	3.0	10.8	6.0	6.3	2.8	8.9	0.0	0.0	18.9
3/18/2012	6.1	0.9	0.0	0.1	44.5	3.0	10.8	6.1	6.3	2.8	8.9	0.0	0.0	19.8
3/19/2012	6.0	0.3	0.0	0.1	44.5	3.0	10.8	6.0	6.3	2.8	8.9	0.0	0.0	19.1
3/20/2012	6.1	0.8	0.0	0.1	44.5	3.0	10.8	6.1	6.3	2.8	8.9	0.0	0.0	19.7
3/21/2012	6.1	0.0	0.0	0.1	44.5	3.0	10.8	6.1	6.3	2.8	8.9	0.0	0.0	18.9

Table F1-2: RGCP Channel Water Budget Equation Analysis Segment 2

2010-12 Study Period

(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	MODFLOW Groundwater Return Flow	Downstream Channel Outflow, below Mesilla Dam	Channel Seepage	MODFLOW Floodplain Recharge	Open Water Channel Evaporation	MODFLOW Riparian Evapo- transpiration	Diversions Authorized (Del Rio, Eastside, & Westside)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
3/22/2012	6.0	0.3	0.0	0.1	44.5	3.0	10.8	6.0	6.3	2.8	8.9	0.0	0.0	19.2
3/23/2012	6.1	0.1	0.0	0.1	44.5	3.0	10.8	6.1	6.3	2.8	8.9	0.0	0.0	19.0
3/24/2012	6.0	0.1	0.0	0.1	44.5	3.0	10.9	6.0	6.3	2.8	8.9	0.0	0.0	19.0
3/25/2012	6.1	0.0	0.0	0.1	44.5	3.0	10.8	6.1	6.3	2.8	8.9	0.0	0.0	18.8
3/26/2012	6.0	0.1	0.0	0.1	44.5	3.0	10.8	6.0	6.3	2.8	8.9	0.0	0.0	18.9
3/27/2012	6.0	1.5	0.0	0.1	44.5	3.0	10.8	6.0	6.3	2.8	8.9	0.0	0.0	20.3
3/28/2012	6.1	0.7	0.0	0.1	44.5	3.0	10.7	6.1	6.3	2.8	8.9	0.0	0.0	19.6
3/29/2012	6.1	0.3	0.0	0.1	44.5	3.0	10.8	6.1	6.3	2.8	8.9	0.0	0.0	19.2
3/30/2012	6.0	0.0	0.0	0.1	44.5	3.0	10.8	6.0	6.3	2.8	8.9	0.0	0.0	18.9
3/31/2012	6.0	0.1	0.0	0.1	44.5	3.0	10.8	6.0	6.3	2.8	8.9	0.0	0.0	19.0
4/1/2012	492.1	0.1	0.0	0.1	44.5	3.0	425.3	67.6	6.3	6.1	8.9	0.0	0.0	25.6
4/2/2012	493.0	0.7	0.0	0.1	44.5	3.0	425.4	67.6	6.3	6.1	8.9	0.0	0.0	27.1
4/3/2012	2189.9	0.6	0.0	0.1	44.5	3.0	442.6	186.0	6.3	6.1	8.9	0.0	0.0	1588.3
4/4/2012	2234.0	0.7	0.0	0.1	44.5	3.0	2003.5	207.9	6.3	6.1	8.9	0.0	0.0	49.7
4/5/2012	2464.8	1.1	0.0	0.1	44.5	3.0	2133.9	219.4	6.3	6.1	8.9	0.0	0.0	138.9
4/6/2012	2761.5	1.2	0.0	0.1	44.5	3.0	2431.5	237.7	6.3	6.1	8.9	0.0	0.0	119.9
4/7/2012	2717.1	0.2	0.0	0.1	44.5	3.0	2504.7	237.4	6.3	6.1	8.9	0.0	0.0	1.6
4/8/2012	2634.8	0.1	0.0	0.1	44.5	3.0	2430.3	232.6	6.3	6.1	8.9	0.0	0.0	-1.6
4/9/2012	2631.6	0.0	0.0	0.1	44.5	3.0	2402.8	232.0	6.3	6.1	8.9	0.0	0.0	23.1
4/10/2012	2612.4	0.0	0.0	0.1	44.5	3.0	2390.3	231.1	6.3	6.1	8.9	0.0	0.0	17.4
4/11/2012	2596.0	0.9	0.0	0.1	44.5	3.0	2371.9	230.0	6.3	6.1	8.9	0.0	0.0	21.3
4/12/2012	2595.5	1.1	0.0	0.1	44.5	3.0	2161.2	229.9	6.3	6.1	8.9	214.2	2.1	17.6
4/13/2012	2543.1	0.2	0.0	0.1	44.5	3.0	2112.3	229.0	6.3	6.1	8.9	257.1	2.6	-28.6
4/14/2012	2173.4	0.1	0.0	0.1	44.5	3.0	1909.6	209.6	6.3	6.1	8.9	220.6	2.2	-140.0
4/15/2012	1814.5	1.4	0.0	0.1	44.5	3.0	1555.1	186.6	6.3	6.1	8.9	236.8	2.4	-136.3
4/16/2012	1788.1	0.3	0.0	0.1	44.5	3.0	1413.6	181.0	6.3	6.1	8.9	201.7	2.0	18.4
4/17/2012	1787.3	0.2	0.0	0.1	44.5	3.0	1417.2	180.8	6.3	6.1	8.9	190.4	1.9	25.5
4/18/2012	1787.4	0.2	0.0	0.1	44.5	3.0	1372.6	180.8	6.3	6.1	8.9	238.0	2.4	22.5
4/19/2012	1782.2	0.2	0.0	0.1	44.5	3.0	1351.6	180.7	6.3	6.1	8.9	257.9	2.6	18.6
4/20/2012	1707.9	0.1	0.0	0.1	44.5	3.0	1337.5	176.9	6.3	6.1	8.9	236.0	2.4	-16.1
4/21/2012	1555.0	0.1	0.0	0.1	44.5	3.0	1235.3	167.3	6.3	6.1	8.9	234.0	2.3	-55.2
4/22/2012	1494.9	1.0	0.0	0.1	44.5	3.0	1131.7	161.5	6.3	6.1	8.9	234.0	2.3	-5.0
4/23/2012	1492.0	0.7	0.0	0.1	44.5	3.0	1097.5	160.4	6.3	6.1	8.9	236.0	2.4	25.2
4/24/2012	1499.5	0.7	0.0	0.1	44.5	3.0	1102.1	160.8	6.3	6.1	8.9	234.0	2.3	29.6
4/25/2012	1520.2	0.4	0.0	0.1	44.5	3.0	1067.8	162.0	6.3	6.1	8.9	281.7	2.8	35.5
4/26/2012	1638.6	0.3	0.0	0.1	44.5	3.0	1096.6	168.9	6.3	6.1	8.9	311.4	3.1	88.4
4/27/2012	1735.5	0.7	0.0	0.1	44.5	3.0	1201.7	176.0	6.3	6.1	8.9	311.4	3.1	73.5
4/28/2012	1789.8	0.1	0.0	0.1	44.5	3.0	1284.4	181.1	6.3	6.1	8.9	311.4	3.1	39.3
4/29/2012	1541.3	0.1	0.0	0.1	44.5	3.0	1312.4	167.9	6.3	6.1	8.9	186.4	1.9	-99.0
4/30/2012	1339.4	0.4	0.0	0.1	44.5	3.0	1112.2	152.7	6.3	6.1	8.9	186.4	1.9	-85.2
5/1/2012	1320.0	0.1	0.0	0.1	44.5	3.0	1166.0	147.7	6.3	9.6	8.9	0.0	0.0	29.2
5/2/2012	1329.0	1.8	0.0	0.1	44.5	3.0	1176.0	148.2	6.3	9.6	8.9	0.0	0.0	29.5
5/3/2012	1305.5	1.4	0.0	0.1	44.5	3.0	1173.9	147.0	6.3	9.6	8.9	0.0	0.0	8.8
5/4/2012	1275.3	0.3	0.0	0.1	44.5	3.0	1151.7	145.2	6.3	9.6	8.9	0.0	0.0	1.5
5/5/2012	788.8	0.5	158.1	0.1	44.5	3.0	991.5	115.5	6.3	9.6	8.9	0.0	0.0	-136.7
5/6/2012	560.7	0.4	53.2	0.1	44.5	3.0	658.5	84.6	6.3	9.6	8.9	0.0	0.0	-105.9
5/7/2012	493.6	1.2	0.0	0.1	44.5	3.0	482.6	70.4	6.3	9.6	8.9	0.0	0.0	-35.3
5/8/2012	903.2	0.0	0.0	0.1	44.5	3.0	676.3	112.6	6.3	9.6	8.9	0.0	0.0	137.2
5/9/2012	826.8	0.0	0.0	0.1	44.5	3.0	723.6	105.7	6.3	9.6	8.9	0.0	0.0	20.3
5/10/2012	491.5	0.0	36.3	0.1	44.5	3.0	572.5	68.8	6.3	9.6	8.9	0.0	0.0	-90.5
5/11/2012	492.1	0.6	0.0	0.1	44.5	3.0	425.1	67.6	6.3	9.6	8.9	0.0	0.0	22.9

Table F1-2: RGCP Channel Water Budget Equation Analysis Segment 2

2010-12 Study Period

(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	MODFLOW Groundwater Return Flow	Downstream Channel Outflow, below Mesilla Dam	Channel Seepage	MODFLOW Floodplain Recharge	Open Water Channel Evaporation	MODFLOW Riparian Evapo-transpiration	Diversions Authorized (Del Rio, Eastside, & Westside)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
5/12/2012	492.0	0.0	0.0	0.1	44.5	3.0	425.3	67.6	6.3	9.6	8.9	0.0	0.0	22.0
5/13/2012	492.1	0.1	0.0	0.1	44.5	3.0	425.3	67.6	6.3	9.6	8.9	0.0	0.0	22.2
5/14/2012	492.1	1.0	0.0	0.1	44.5	3.0	425.3	67.6	6.3	9.6	8.9	0.0	0.0	23.0
5/15/2012	492.0	1.2	0.0	0.1	44.5	3.0	425.3	67.6	6.3	9.6	8.9	0.0	0.0	23.1
5/16/2012	492.0	1.8	0.0	0.1	44.5	3.0	425.4	67.6	6.3	9.6	8.9	0.0	0.0	23.6
5/17/2012	492.0	0.4	0.0	0.1	44.5	3.0	425.4	67.6	6.3	9.6	8.9	0.0	0.0	22.3
5/18/2012	878.6	0.5	0.0	0.1	44.5	3.0	673.7	111.9	6.3	9.6	8.9	0.0	0.0	116.4
5/19/2012	750.6	0.0	0.0	0.1	44.5	3.0	692.4	98.4	6.3	9.6	8.9	0.0	0.0	-17.3
5/20/2012	498.0	0.4	18.9	0.1	44.5	3.0	561.5	70.9	6.3	9.6	8.9	0.0	0.0	-92.2
5/21/2012	491.9	1.6	0.0	0.1	44.5	3.0	431.8	67.7	6.3	9.6	8.9	0.0	0.0	16.9
5/22/2012	492.2	0.2	0.0	0.1	44.5	3.0	425.1	67.6	6.3	9.6	8.9	0.0	0.0	22.5
5/23/2012	492.2	1.3	0.0	0.1	44.5	3.0	425.4	67.6	6.3	9.6	8.9	0.0	0.0	23.3
5/24/2012	709.4	0.3	0.0	0.1	44.5	3.0	501.9	92.6	6.3	9.6	8.9	0.0	0.0	138.1
5/25/2012	492.2	1.6	3.0	0.1	44.5	3.0	539.8	68.5	6.3	9.6	8.9	0.0	0.0	-88.6
5/26/2012	491.5	0.2	0.0	0.1	44.5	3.0	425.5	67.5	6.3	9.6	8.9	0.0	0.0	21.7
5/27/2012	492.0	0.9	0.0	0.1	44.5	3.0	424.7	67.6	6.3	9.6	8.9	0.0	0.0	23.5
5/28/2012	492.2	1.0	0.0	0.1	44.5	3.0	425.3	67.6	6.3	9.6	8.9	0.0	0.0	23.2
5/29/2012	492.1	0.5	0.0	0.1	44.5	3.0	425.4	67.6	6.3	9.6	8.9	0.0	0.0	22.5
5/30/2012	1407.5	0.0	0.0	0.1	44.5	3.0	425.5	81.4	6.3	9.6	8.9	0.0	0.0	923.5
5/31/2012	1959.2	1.2	0.0	0.1	44.5	3.0	1473.7	188.6	6.3	9.6	8.9	130.9	1.3	190.1
6/1/2012	1760.6	0.6	0.0	0.1	44.5	3.0	789.8	180.7	6.3	9.9	8.9	931.2	9.3	-117.9
6/2/2012	1846.7	0.4	0.0	0.1	44.5	3.0	630.8	182.9	6.3	9.9	8.9	991.7	9.9	61.9
6/3/2012	2174.3	1.0	0.0	0.1	44.5	3.0	772.2	203.1	6.3	9.9	8.9	1081.0	10.8	138.4
6/4/2012	2197.9	0.4	0.0	0.1	44.5	3.0	957.6	206.3	6.3	9.9	8.9	1023.5	10.2	30.6
6/5/2012	2285.6	0.3	0.0	0.1	44.5	3.0	767.0	209.6	6.3	9.9	8.9	1267.4	12.7	61.5
6/6/2012	2647.5	1.1	0.0	0.1	44.5	3.0	865.9	228.5	6.3	9.9	8.9	1392.4	13.9	181.4
6/7/2012	2991.0	2.5	0.0	0.1	44.5	3.0	1247.2	249.9	6.3	9.9	8.9	1396.4	14.0	119.6
6/8/2012	2847.9	1.2	0.0	0.1	44.5	3.0	1289.5	244.6	6.3	9.9	8.9	1372.6	13.7	-39.8
6/9/2012	2915.6	0.3	0.0	0.1	44.5	3.0	1280.7	246.5	6.3	9.9	8.9	1360.7	13.6	45.1
6/10/2012	3188.5	3.5	0.0	0.1	44.5	3.0	1533.2	259.9	6.3	9.9	8.9	1303.1	13.0	114.0
6/11/2012	3286.1	0.7	0.0	0.1	44.5	3.0	1726.3	266.6	6.3	9.9	8.9	1279.3	12.8	34.0
6/12/2012	3137.2	0.9	0.0	0.1	44.5	3.0	1944.9	260.0	6.3	9.9	8.9	977.9	9.8	-25.1
6/13/2012	3000.9	0.2	0.0	0.1	44.5	3.0	1746.7	253.6	6.3	9.9	8.9	1077.0	10.8	-57.2
6/14/2012	2809.4	1.9	0.0	0.1	44.5	3.0	1579.6	244.0	6.3	9.9	8.9	1083.0	10.8	-75.9
6/15/2012	2492.9	3.2	0.0	0.1	44.5	3.0	1305.7	226.4	6.3	9.9	8.9	1085.0	10.8	-102.0
6/16/2012	2435.6	1.8	0.0	0.1	44.5	3.0	1028.3	220.6	6.3	9.9	8.9	1209.9	12.1	-2.4
6/17/2012	2496.7	2.5	0.0	0.1	44.5	3.0	1036.0	223.3	6.3	9.9	8.9	1209.9	12.1	48.4
6/18/2012	2639.2	4.5	0.0	0.1	44.5	3.0	1222.3	232.5	6.3	9.9	8.9	1160.3	11.6	47.3
6/19/2012	2510.0	1.4	0.0	0.1	44.5	3.0	1288.3	225.4	6.3	9.9	8.9	1033.4	10.3	-16.8
6/20/2012	2543.1	1.5	0.0	0.1	44.5	3.0	1253.3	226.6	6.3	9.9	8.9	1055.2	10.6	28.4
6/21/2012	2619.7	0.7	0.0	0.1	44.5	3.0	1334.4	230.4	6.3	9.9	8.9	1025.5	10.3	49.4
6/22/2012	2628.1	0.4	0.0	0.1	44.5	3.0	1347.5	232.2	6.3	9.9	8.9	1065.1	10.7	2.8
6/23/2012	2570.3	1.5	0.0	0.1	44.5	3.0	1246.0	229.0	6.3	9.9	8.9	1128.6	11.3	-12.6
6/24/2012	2453.9	1.8	0.0	0.1	44.5	3.0	1107.1	222.9	6.3	9.9	8.9	1181.2	11.8	-36.9
6/25/2012	2404.9	1.0	0.0	0.1	44.5	3.0	1019.3	219.2	6.3	9.9	8.9	1190.1	11.9	-4.6
6/26/2012	2526.8	0.9	0.0	0.1	44.5	3.0	1057.1	224.7	6.3	9.9	8.9	1196.0	12.0	68.5
6/27/2012	2591.1	3.7	0.0	0.1	44.5	3.0	1108.1	229.9	6.3	9.9	8.9	1253.6	12.5	22.2
6/28/2012	2454.0	2.6	0.0	0.1	44.5	3.0	1079.3	223.5	6.3	9.9	8.9	1221.8	12.2	-49.0
6/29/2012	2305.2	4.7	0.0	0.1	44.5	3.0	900.1	213.8	6.3	9.9	8.9	1251.6	12.5	-36.5
6/30/2012	2353.0	2.8	0.0	0.1	44.5	3.0	865.6	215.4	6.3	9.9	8.9	1257.5	12.6	36.3
7/1/2012	2396.7	1.5	0.0	0.1	44.5	3.0	952.6	218.2	6.3	7.3	8.9	1213.9	12.1	35.1

Table F1-2: RGCP Channel Water Budget Equation Analysis Segment 2

2010-12 Study Period

(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	MODFLOW Groundwater Return Flow	Downstream Channel Outflow, below Mesilla Dam	Channel Seepage	MODFLOW Floodplain Recharge	Open Water Channel Evaporation	MODFLOW Riparian Evapo-transpiration	Diversions Authorized (Del Rio, Eastside, & Westside)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
7/2/2012	2410.3	4.9	0.0	0.1	44.5	3.0	1036.7	219.2	6.3	7.3	8.9	1152.4	11.5	28.4
7/3/2012	2405.1	1.2	0.0	0.1	44.5	3.0	1090.7	219.7	6.3	7.3	8.9	1114.7	11.1	2.6
7/4/2012	2285.9	2.1	0.0	0.1	44.5	3.0	1097.7	213.2	6.3	7.3	8.9	1029.4	10.3	-30.4
7/5/2012	2170.6	4.9	0.0	0.1	44.5	3.0	1103.8	206.3	6.3	7.3	8.9	912.4	9.1	-24.9
7/6/2012	2031.3	1.3	0.0	0.1	44.5	3.0	1077.3	198.2	6.3	7.3	8.9	823.1	8.2	-44.6
7/7/2012	1896.9	1.8	0.0	4.5	44.5	3.0	1057.2	190.4	6.3	7.3	8.9	726.0	7.3	-49.2
7/8/2012	1684.7	2.2	0.0	9.3	44.5	3.0	985.5	177.4	6.3	7.3	8.9	638.7	6.4	-84.6
7/9/2012	1522.9	6.2	0.0	10.1	44.5	3.0	921.9	165.1	6.3	7.3	8.9	521.7	5.2	-48.1
7/10/2012	1539.5	4.8	0.0	9.8	44.5	3.0	853.0	164.1	6.3	7.3	8.9	527.6	5.3	30.8
7/11/2012	1497.0	3.0	0.0	3.9	44.5	3.0	863.4	162.2	6.3	7.3	8.9	509.8	5.1	-9.7
7/12/2012	1307.6	1.8	0.0	10.1	44.5	3.0	762.9	150.2	6.3	7.3	8.9	511.7	5.1	-83.4
7/13/2012	1346.1	2.1	0.0	10.5	44.5	3.0	653.2	149.0	6.3	7.3	8.9	529.6	5.3	48.8
7/14/2012	1429.2	1.6	0.0	10.9	44.5	3.0	708.9	154.8	6.3	7.3	8.9	531.6	5.3	67.8
7/15/2012	1548.9	3.5	0.0	11.4	44.5	3.0	694.9	163.0	6.3	7.3	8.9	646.6	6.5	80.6
7/16/2012	1648.8	2.0	0.0	11.0	44.5	3.0	787.4	169.8	6.3	7.3	8.9	646.6	6.5	79.4
7/17/2012	2012.2	6.5	0.0	6.7	44.5	3.0	833.6	188.8	6.3	7.3	8.9	797.4	8.0	227.1
7/18/2012	2633.2	1.9	0.0	8.8	44.5	3.0	1088.5	227.4	6.3	7.3	8.9	1094.9	10.9	254.5
7/19/2012	2881.7	2.7	0.0	10.3	44.5	3.0	1361.1	244.1	6.3	7.3	8.9	1207.9	12.1	102.9
7/20/2012	2930.2	2.6	0.0	11.7	44.5	3.0	1257.5	248.4	6.3	7.3	8.9	1442.0	14.4	17.5
7/21/2012	2858.4	5.0	0.0	12.3	44.5	3.0	1196.4	245.7	6.3	7.3	8.9	1475.7	14.8	-22.2
7/22/2012	2822.3	2.1	0.0	12.9	44.5	3.0	1083.1	242.9	6.3	7.3	8.9	1531.2	15.3	0.0
7/23/2012	2819.3	4.7	0.0	13.5	44.5	3.0	1090.1	242.5	6.3	7.3	8.9	1505.5	15.1	19.6
7/24/2012	2842.1	1.6	0.0	13.9	44.5	3.0	1245.0	243.5	6.3	7.3	8.9	1356.7	13.6	32.3
7/25/2012	2877.4	2.0	0.0	14.2	44.5	3.0	1370.6	246.0	6.3	7.3	8.9	1275.4	12.8	21.7
7/26/2012	2763.5	4.7	0.0	14.6	44.5	3.0	1340.0	241.4	6.3	7.3	8.9	1267.4	12.7	-45.8
7/27/2012	2540.6	2.0	0.0	14.8	44.5	3.0	1179.5	228.7	6.3	7.3	8.9	1231.7	12.3	-62.4
7/28/2012	2490.0	3.3	0.0	15.2	44.5	3.0	1057.8	224.8	6.3	7.3	8.9	1251.6	12.5	-5.7
7/29/2012	2456.2	6.9	0.0	15.0	44.5	3.0	1004.5	222.5	6.3	7.3	8.9	1261.5	12.6	9.7
7/30/2012	2476.1	2.9	0.0	15.1	44.5	3.0	1007.8	223.2	6.3	7.3	8.9	1255.5	12.6	27.6
7/31/2012	2532.2	1.2	0.0	14.9	44.5	3.0	1048.8	225.8	6.3	7.3	8.9	1247.6	12.5	46.0
8/1/2012	2675.5	6.9	0.0	13.8	44.5	3.0	1143.0	233.6	6.3	6.9	8.9	1309.3	13.1	30.7
8/2/2012	2666.3	6.6	0.0	14.3	44.5	3.0	1204.8	235.5	6.3	6.9	8.9	1278.5	12.8	-11.2
8/3/2012	2457.6	4.8	0.0	15.7	44.5	3.0	1042.1	224.6	6.3	6.9	8.9	1304.6	13.0	-73.0
8/4/2012	2336.7	1.9	0.0	15.8	44.5	3.0	871.2	216.3	6.3	6.9	8.9	1318.2	13.2	-30.6
8/5/2012	2332.8	4.2	0.0	15.7	44.5	3.0	787.8	215.2	6.3	6.9	8.9	1355.4	13.6	15.4
8/6/2012	2335.0	3.7	0.0	15.8	44.5	3.0	808.6	215.0	6.3	6.9	8.9	1349.3	13.5	2.7
8/7/2012	2426.8	4.7	0.0	15.9	44.5	3.0	920.1	219.2	6.3	6.9	8.9	1294.4	12.9	34.9
8/8/2012	2597.8	1.4	0.0	16.1	44.5	3.0	1085.9	229.0	6.3	6.9	8.9	1275.9	12.8	45.5
8/9/2012	2640.3	5.1	0.0	16.1	44.5	3.0	1131.5	232.7	6.3	6.9	8.9	1290.1	12.9	27.5
8/10/2012	2635.7	3.6	0.0	114.8	44.5	3.0	1104.2	235.0	6.3	6.9	8.9	1391.1	13.9	43.3
8/11/2012	2795.1	5.1	0.0	83.8	44.5	3.0	1205.8	241.8	6.3	6.9	8.9	1396.9	14.0	59.4
8/12/2012	2942.2	6.6	0.0	199.3	44.5	3.0	1447.4	253.2	6.3	6.9	8.9	1360.7	13.6	106.5
8/13/2012	2991.3	4.3	0.0	192.3	44.5	3.0	1522.0	257.2	6.3	6.9	8.9	1408.4	14.1	20.1
8/14/2012	2824.0	10.7	0.0	163.5	44.5	3.0	1460.0	252.3	6.3	6.9	8.9	1450.1	14.5	-144.3
8/15/2012	2220.9	6.8	0.0	236.4	44.5	3.0	1334.8	221.1	6.3	6.9	8.9	1131.2	11.3	-200.2
8/16/2012	1853.1	2.6	0.0	18.1	44.5	3.0	1471.8	190.3	6.3	6.9	8.9	402.1	4.0	-165.1
8/17/2012	1777.9	4.5	0.0	18.5	44.5	3.0	1280.2	181.8	6.3	6.9	8.9	370.3	3.7	-5.9
8/18/2012	1776.0	3.3	0.0	18.7	44.5	3.0	1236.5	180.7	6.3	6.9	8.9	380.3	3.8	25.7
8/19/2012	1776.1	3.4	0.0	18.4	44.5	3.0	1225.7	180.7	6.3	6.9	8.9	391.1	3.9	25.7
8/20/2012	1775.4	8.3	0.0	18.3	44.5	3.0	1219.2	180.7	6.3	6.9	8.9	397.4	4.0	30.0
8/21/2012	1766.5	1.8	0.0	18.4	44.5	3.0	1279.5	180.2	6.3	6.9	8.9	328.5	3.3	23.7



Table F1-2: RGCP Channel Water Budget Equation Analysis Segment 2

2010-12 Study Period

(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	MODFLOW Groundwater Return Flow	Downstream Channel Outflow, below Mesilla Dam	Channel Seepage	MODFLOW Floodplain Recharge	Open Water Channel Evaporation	MODFLOW Riparian Evapo-transpiration	Diversions Authorized (Del Rio, Eastside, & Westside)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
8/22/2012	1765.8	7.1	0.0	17.8	44.5	3.0	1324.3	180.1	6.3	6.9	8.9	279.8	2.8	31.9
8/23/2012	1747.3	4.9	0.0	17.1	44.5	3.0	1284.6	179.4	6.3	6.9	8.9	319.3	3.2	11.4
8/24/2012	1584.6	3.7	0.0	16.3	44.5	3.0	1200.6	170.4	6.3	6.9	8.9	319.9	3.2	-61.0
8/25/2012	1387.9	5.8	0.0	17.3	44.5	3.0	1038.0	156.9	6.3	6.9	8.9	320.2	3.2	-78.6
8/26/2012	1382.0	2.8	0.0	17.3	44.5	3.0	950.1	152.9	6.3	6.9	8.9	292.0	2.9	32.4
8/27/2012	1382.6	5.8	0.0	17.1	44.5	3.0	958.9	153.1	6.3	6.9	8.9	289.8	2.9	29.1
8/28/2012	1381.2	2.8	0.0	16.8	44.5	3.0	894.9	153.1	6.3	6.9	8.9	358.0	3.6	20.2
8/29/2012	1328.8	1.2	0.0	16.7	44.5	3.0	857.8	150.1	6.3	6.9	8.9	373.8	3.7	-9.7
8/30/2012	1290.6	4.9	0.0	16.4	44.5	3.0	784.3	146.8	6.3	6.9	8.9	401.8	4.0	4.4
8/31/2012	1301.1	3.8	0.0	16.1	44.5	3.0	758.3	146.6	6.3	6.9	8.9	407.0	4.1	34.5
9/1/2012	1309.4	0.9	0.0	15.7	44.5	3.0	775.5	147.4	6.3	5.5	8.9	400.6	4.0	29.2
9/2/2012	1317.1	4.8	0.0	15.6	44.5	3.0	787.0	147.9	6.3	5.5	8.9	396.1	4.0	33.0
9/3/2012	1321.2	2.8	0.0	15.7	44.5	3.0	796.2	148.5	6.3	5.5	8.9	393.9	3.9	27.7
9/4/2012	1176.1	4.8	0.0	15.7	44.5	3.0	810.4	140.5	6.3	5.5	8.9	333.8	3.3	-61.4
9/5/2012	1048.4	4.1	0.0	15.5	44.5	3.0	892.9	129.5	6.3	5.5	8.9	105.2	1.1	-33.0
9/6/2012	1027.1	5.3	0.0	14.2	44.5	3.0	909.1	124.8	6.3	5.5	8.9	5.5	0.1	33.8
9/7/2012	1020.8	5.6	0.0	13.2	44.5	3.0	892.6	124.4	6.3	5.5	8.9	24.0	0.2	25.3
9/8/2012	1013.2	2.0	0.0	14.1	44.5	3.0	677.7	123.8	6.3	5.5	8.9	246.9	2.5	7.7
9/9/2012	1000.9	2.1	0.0	14.2	44.5	3.0	507.5	122.8	6.3	5.5	8.9	410.8	4.1	2.8
9/10/2012	987.7	2.4	0.0	13.8	44.5	3.0	278.3	121.6	6.3	5.5	8.9	631.5	6.3	-0.8
9/11/2012	973.1	3.2	0.0	12.8	44.5	3.0	224.8	120.3	6.3	5.5	8.9	675.5	6.8	-4.9
9/12/2012	959.7	5.8	0.0	10.5	44.5	3.0	538.8	119.0	6.3	5.5	8.9	295.7	3.0	49.1
9/13/2012	940.8	3.0	0.0	8.5	44.5	3.0	830.0	117.4	6.3	5.5	8.9	0.0	0.0	31.6
9/14/2012	708.5	3.3	36.2	9.7	44.5	3.0	798.9	102.1	6.3	5.5	8.9	0.0	0.0	-116.6
9/15/2012	6.1	2.1	0.0	11.0	44.5	3.0	11.1	6.1	6.3	5.5	8.9	0.0	0.0	28.8
9/16/2012	6.0	3.7	0.0	11.0	44.5	3.0	11.0	6.0	6.3	5.5	8.9	0.0	0.0	30.4
9/17/2012	6.1	1.6	0.0	10.5	44.5	3.0	10.9	6.1	6.3	5.5	8.9	0.0	0.0	27.9
9/18/2012	6.0	3.1	0.0	8.9	44.5	3.0	11.0	6.0	6.3	5.5	8.9	0.0	0.0	27.7
9/19/2012	6.1	3.0	0.0	4.6	44.5	3.0	11.7	6.1	6.3	5.5	8.9	0.0	0.0	22.7
9/20/2012	6.1	3.3	0.0	0.2	44.5	3.0	14.8	6.1	6.3	5.5	8.9	0.0	0.0	15.4
9/21/2012	6.1	0.5	0.0	0.0	44.5	3.0	16.5	6.1	6.3	5.5	8.9	0.0	0.0	10.8
9/22/2012	6.0	3.7	0.0	0.0	44.5	3.0	14.6	6.0	6.3	5.5	8.9	0.0	0.0	15.9
9/23/2012	6.1	3.8	0.0	0.2	44.5	3.0	12.7	6.1	6.3	5.5	8.9	0.0	0.0	18.0
9/24/2012	6.1	1.4	0.0	0.2	44.5	3.0	11.1	6.1	6.3	5.5	8.9	0.0	0.0	17.3
9/25/2012	6.1	3.7	0.0	0.2	44.5	3.0	10.8	6.1	6.3	5.5	8.9	0.0	0.0	19.8
9/26/2012	6.1	1.2	0.0	0.2	44.5	3.0	10.7	6.1	6.3	5.5	8.9	0.0	0.0	17.5
9/27/2012	6.1	0.3	0.0	0.2	44.5	3.0	10.8	6.1	6.3	5.5	8.9	0.0	0.0	16.5
9/28/2012	6.1	0.2	0.0	0.2	44.5	3.0	10.8	6.1	6.3	5.5	8.9	0.0	0.0	16.4
9/29/2012	6.0	1.6	0.0	0.2	44.5	3.0	10.8	6.0	6.3	5.5	8.9	0.0	0.0	17.7
9/30/2012	6.0	1.6	0.0	0.2	44.5	3.0	10.7	6.0	6.3	5.5	8.9	0.0	0.0	17.9
10/1/2012	6.1	2.6	0.0	0.2	44.5	3.0	10.8	6.1	6.3	0.0	8.9	0.0	0.0	24.3
10/2/2012	6.0	0.7	0.0	0.2	44.5	3.0	10.8	6.0	6.3	0.0	8.9	0.0	0.0	22.5
10/3/2012	6.0	1.9	0.0	0.2	44.5	3.0	10.8	6.0	6.3	0.0	8.9	0.0	0.0	23.7
10/4/2012	6.1	2.0	0.0	0.2	44.5	3.0	10.7	6.1	6.3	0.0	8.9	0.0	0.0	23.8
10/5/2012	6.0	1.8	0.0	0.2	44.5	3.0	10.7	6.0	6.3	0.0	8.9	0.0	0.0	23.6
10/6/2012	6.0	0.4	0.0	0.2	44.5	3.0	10.7	6.0	6.3	0.0	8.9	0.0	0.0	22.3
10/7/2012	6.1	0.5	0.0	0.2	44.5	3.0	10.8	6.1	6.3	0.0	8.9	0.0	0.0	22.3
10/8/2012	6.1	1.1	0.0	0.2	44.5	3.0	10.7	6.1	6.3	0.0	8.9	0.0	0.0	22.9
10/9/2012	6.0	1.2	0.0	0.2	44.5	3.0	10.7	6.0	6.3	0.0	8.9	0.0	0.0	23.1
10/10/2012	6.1	0.8	0.0	0.2	44.5	3.0	10.7	6.1	6.3	0.0	8.9	0.0	0.0	22.7
10/11/2012	6.0	2.7	0.0	0.2	44.5	3.0	10.7	6.0	6.3	0.0	8.9	0.0	0.0	24.5



Table F1-2: RGCP Channel Water Budget Equation Analysis Segment 2

2010-12 Study Period

(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	MODFLOW Groundwater Return Flow	Downstream Channel Outflow, below Mesilla Dam	Channel Seepage	MODFLOW Floodplain Recharge	Open Water Channel Evaporation	MODFLOW Riparian Evapo-transpiration	Diversions Authorized (Del Rio, Eastside, & Westside)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
10/12/2012	6.1	0.6	0.0	0.2	44.5	3.0	10.7	6.1	6.3	0.0	8.9	0.0	0.0	22.4
10/13/2012	6.0	1.7	0.0	0.2	44.5	3.0	10.7	6.0	6.3	0.0	8.9	0.0	0.0	23.5
10/14/2012	6.0	1.2	0.0	0.2	44.5	3.0	10.7	6.0	6.3	0.0	8.9	0.0	0.0	23.0
10/15/2012	6.1	2.1	0.0	0.2	44.5	3.0	10.7	6.1	6.3	0.0	8.9	0.0	0.0	24.0
10/16/2012	6.1	0.5	0.0	0.2	44.5	3.0	10.7	6.1	6.3	0.0	8.9	0.0	0.0	22.4
10/17/2012	6.1	5.0	0.0	0.2	44.5	3.0	10.8	6.1	6.3	0.0	8.9	0.0	0.0	26.8
10/18/2012	6.0	1.4	0.0	0.2	44.5	3.0	10.7	6.0	6.3	0.0	8.9	0.0	0.0	23.3
10/19/2012	6.1	3.2	0.0	0.0	44.5	3.0	10.8	6.1	6.3	0.0	8.9	0.0	0.0	24.8
10/20/2012	6.0	3.8	0.0	0.0	44.5	3.0	10.7	6.0	6.3	0.0	8.9	0.0	0.0	25.4
10/21/2012	6.1	2.8	0.0	0.0	44.5	3.0	10.8	6.1	6.3	0.0	8.9	0.0	0.0	24.4
10/22/2012	6.0	2.6	0.0	0.2	44.5	3.0	10.7	6.0	6.3	0.0	8.9	0.0	0.0	24.5
10/23/2012	6.1	2.6	0.0	0.2	44.5	3.0	10.6	6.1	6.3	0.0	8.9	0.0	0.0	24.6
10/24/2012	6.1	2.8	0.0	0.2	44.5	3.0	10.8	6.1	6.3	0.0	8.9	0.0	0.0	24.6
10/25/2012	6.0	1.6	0.0	0.2	44.5	3.0	10.7	6.0	6.3	0.0	8.9	0.0	0.0	23.5
10/26/2012	6.0	2.8	0.0	0.2	44.5	3.0	10.7	6.0	6.3	0.0	8.9	0.0	0.0	24.6
10/27/2012	6.1	2.2	0.0	0.2	44.5	3.0	10.7	6.1	6.3	0.0	8.9	0.0	0.0	24.0
10/28/2012	6.1	3.2	0.0	0.2	44.5	3.0	10.8	6.1	6.3	0.0	8.9	0.0	0.0	25.0
10/29/2012	6.0	1.4	0.0	0.2	44.5	3.0	10.8	6.0	6.3	0.0	8.9	0.0	0.0	23.2
10/30/2012	6.0	1.2	0.0	0.3	44.5	3.0	10.6	6.0	6.3	0.0	8.9	0.0	0.0	23.1
10/31/2012	6.1	0.7	0.0	0.3	44.5	3.0	10.8	6.1	6.3	0.0	8.9	0.0	0.0	22.5
11/1/2012	6.1	1.8	0.0	51.4	44.5	6.5	10.8	6.1	0.1	0.0	1.4	0.0	0.0	91.9
11/2/2012	6.0	0.5	0.0	0.2	44.5	6.5	10.8	6.0	0.1	0.0	1.4	0.0	0.0	39.4
11/3/2012	6.1	1.9	0.0	0.1	44.5	6.5	10.8	6.1	0.1	0.0	1.4	0.0	0.0	40.8
11/4/2012	6.1	0.5	0.0	0.1	44.5	6.5	10.9	6.1	0.1	0.0	1.4	0.0	0.0	39.3
11/5/2012	6.0	2.4	0.0	0.2	44.5	6.5	11.0	6.0	0.1	0.0	1.4	0.0	0.0	41.2
11/6/2012	6.1	0.4	0.0	0.2	44.5	6.5	11.1	6.1	0.1	0.0	1.4	0.0	0.0	39.0
11/7/2012	6.1	1.5	0.0	0.2	44.5	6.5	11.1	6.1	0.1	0.0	1.4	0.0	0.0	40.0
11/8/2012	6.1	1.4	0.0	0.0	44.5	6.5	11.2	6.1	0.1	0.0	1.4	0.0	0.0	39.6
11/9/2012	6.0	0.8	0.0	0.0	44.5	6.5	11.3	6.0	0.1	0.0	1.4	0.0	0.0	39.0
11/10/2012	6.1	0.2	0.0	0.0	44.5	6.5	11.3	6.1	0.1	0.0	1.4	0.0	0.0	38.4
11/11/2012	6.2	1.2	0.0	0.0	44.5	6.5	11.4	6.2	0.1	0.0	1.4	0.0	0.0	39.3
11/12/2012	6.1	0.7	0.0	0.0	44.5	6.5	11.7	6.1	0.1	0.0	1.4	0.0	0.0	38.6
11/13/2012	6.1	1.1	0.0	0.0	44.5	6.5	11.7	6.1	0.1	0.0	1.4	0.0	0.0	38.9
11/14/2012	6.0	4.9	0.0	0.2	44.5	6.5	11.8	6.0	0.1	0.0	1.4	0.0	0.0	42.9
11/15/2012	6.0	0.9	0.0	0.3	44.5	6.5	11.9	6.0	0.1	0.0	1.4	0.0	0.0	38.9
11/16/2012	6.1	1.6	0.0	0.2	44.5	6.5	11.8	6.1	0.1	0.0	1.4	0.0	0.0	39.5
11/17/2012	6.1	0.2	0.0	0.2	44.5	6.5	11.7	6.1	0.1	0.0	1.4	0.0	0.0	38.2
11/18/2012	6.0	0.2	0.0	0.2	44.5	6.5	11.9	6.0	0.1	0.0	1.4	0.0	0.0	38.1
11/19/2012	6.1	0.7	0.0	0.3	44.5	6.5	11.7	6.1	0.1	0.0	1.4	0.0	0.0	38.8
11/20/2012	6.0	0.1	0.0	0.3	44.5	6.5	11.8	6.0	0.1	0.0	1.4	0.0	0.0	38.0
11/21/2012	6.1	0.1	0.0	0.2	44.5	6.5	11.8	6.1	0.1	0.0	1.4	0.0	0.0	38.0
11/22/2012	6.1	0.3	0.0	0.2	44.5	6.5	11.9	6.1	0.1	0.0	1.4	0.0	0.0	38.2
11/23/2012	6.1	0.3	0.0	0.3	44.5	6.5	11.9	6.1	0.1	0.0	1.4	0.0	0.0	38.2
11/24/2012	6.1	1.0	0.0	0.3	44.5	6.5	11.9	6.1	0.1	0.0	1.4	0.0	0.0	38.9
11/25/2012	6.0	0.1	0.0	0.3	44.5	6.5	11.9	6.0	0.1	0.0	1.4	0.0	0.0	38.0
11/26/2012	6.1	0.7	0.0	0.3	44.5	6.5	11.9	6.1	0.1	0.0	1.4	0.0	0.0	38.6
11/27/2012	6.1	2.2	0.0	0.3	44.5	6.5	11.9	6.1	0.1	0.0	1.4	0.0	0.0	40.1
11/28/2012	6.1	1.4	0.0	0.3	44.5	6.5	11.9	6.1	0.1	0.0	1.4	0.0	0.0	39.3
11/29/2012	6.1	1.1	0.0	0.3	44.5	6.5	11.9	6.1	0.1	0.0	1.4	0.0	0.0	39.0
11/30/2012	6.1	0.5	0.0	0.3	44.5	6.5	11.9	6.1	0.1	0.0	1.4	0.0	0.0	38.4

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

$$\Delta S_{ic} = (Q_{us} + P_c + Q_{cin} + Q_{irf} + Q_{gwrf}) - (Q_{cds} + Q_{cs} + Q_{fpr} + ET + Q_{da} + Q_{du})$$

- Sum of Inflow
- Sum of Outflow
- $\Delta S_{ic}$  - Change in Channel Storage

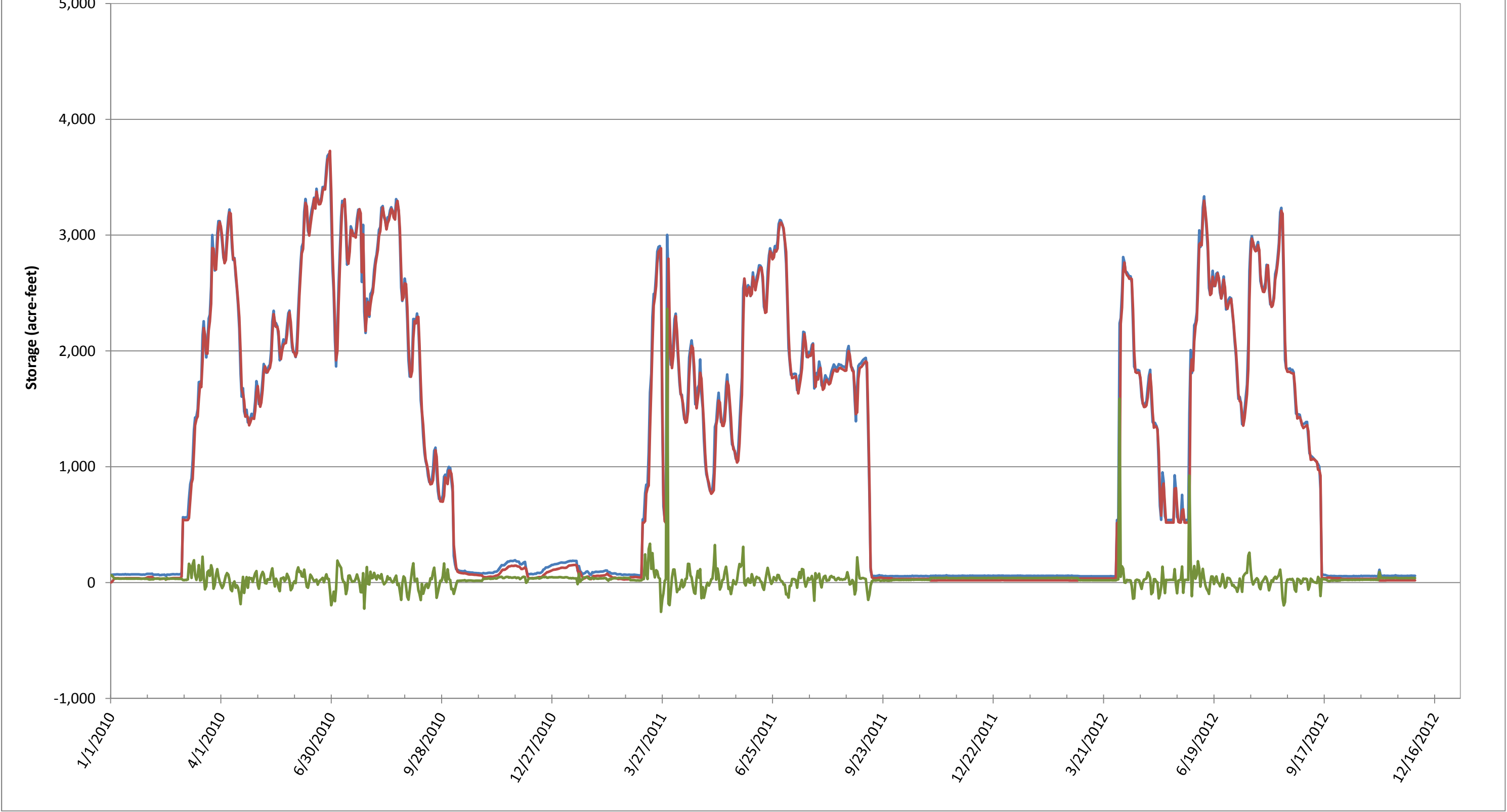


Table F1-3: RGCP Channel Water Budget Equation Analysis Segment 32010-12 Study Period(Units - Acre-Feet)

	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	MODFLOW Floodplain Recharge	Open Water Channel Evaporation	MODFLOW Riparian Evapo-transpiration	Diversions Authorized (None)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
1/1/2010	0.0	0.9	0.0	0.0	2.9	0.1	0.0	0.0	0.1	0.0	2.9	0.0	0.0	0.9
1/2/2010	0.0	0.8	0.0	0.0	2.9	0.1	0.0	0.0	0.1	0.0	2.9	0.0	0.0	0.7
1/3/2010	11.1	0.3	0.0	0.0	2.9	0.1	0.0	11.1	0.1	0.0	2.9	0.0	0.0	0.3
1/4/2010	28.2	0.8	0.0	0.0	2.9	0.1	20.9	28.2	0.1	0.0	2.9	0.0	0.0	-20.1
1/5/2010	28.9	0.3	0.0	0.0	2.9	0.1	23.6	28.9	0.1	0.0	2.9	0.0	0.0	-23.3
1/6/2010	28.7	1.0	0.0	0.0	2.9	0.1	24.1	28.7	0.1	0.0	2.9	0.0	0.0	-23.1
1/7/2010	28.8	1.2	0.0	0.0	2.9	0.1	24.0	28.8	0.1	0.0	2.9	0.0	0.0	-22.8
1/8/2010	28.8	0.8	0.0	0.0	2.9	0.1	24.0	28.8	0.1	0.0	2.9	0.0	0.0	-23.2
1/9/2010	28.5	0.7	0.0	0.0	2.9	0.1	23.9	28.5	0.1	0.0	2.9	0.0	0.0	-23.2
1/10/2010	28.6	0.6	0.0	0.0	2.9	0.1	23.7	28.6	0.1	0.0	2.9	0.0	0.0	-23.2
1/11/2010	28.6	1.3	0.0	0.0	2.9	0.1	23.7	28.6	0.1	0.0	2.9	0.0	0.0	-22.5
1/12/2010	28.8	0.4	0.0	0.0	2.9	0.1	23.8	28.8	0.1	0.0	2.9	0.0	0.0	-23.4
1/13/2010	29.2	1.4	0.0	0.0	2.9	0.1	24.0	29.2	0.1	0.0	2.9	0.0	0.0	-22.7
1/14/2010	29.4	0.2	0.0	0.0	2.9	0.1	24.3	29.4	0.1	0.0	2.9	0.0	0.0	-24.2
1/15/2010	29.5	0.7	0.0	0.0	2.9	0.1	24.5	29.5	0.1	0.0	2.9	0.0	0.0	-23.9
1/16/2010	29.3	0.1	0.0	0.0	2.9	0.1	24.6	29.3	0.1	0.0	2.9	0.0	0.0	-24.5
1/17/2010	29.4	0.3	0.0	0.0	2.9	0.1	24.4	29.4	0.1	0.0	2.9	0.0	0.0	-24.2
1/18/2010	29.4	1.0	0.0	0.0	2.9	0.1	24.5	29.4	0.1	0.0	2.9	0.0	0.0	-23.5
1/19/2010	29.2	0.7	0.0	0.0	2.9	0.1	24.5	29.2	0.1	0.0	2.9	0.0	0.0	-23.8
1/20/2010	29.2	0.9	0.0	0.0	2.9	0.1	24.5	29.2	0.1	0.0	2.9	0.0	0.0	-23.6
1/21/2010	29.1	0.6	0.0	0.0	2.9	0.1	24.5	29.1	0.1	0.0	2.9	0.0	0.0	-23.9
1/22/2010	29.1	0.8	0.0	0.0	2.9	0.1	24.5	29.1	0.1	0.0	2.9	0.0	0.0	-23.8
1/23/2010	29.5	0.1	0.0	0.0	2.9	0.1	24.5	29.5	0.1	0.0	2.9	0.0	0.0	-24.4
1/24/2010	29.4	0.8	0.0	0.0	2.9	0.1	24.8	29.4	0.1	0.0	2.9	0.0	0.0	-24.0
1/25/2010	28.6	0.7	0.0	0.0	2.9	0.1	24.5	28.6	0.1	0.0	2.9	0.0	0.0	-23.8
1/26/2010	27.5	0.3	0.0	0.0	2.9	0.1	23.7	27.5	0.1	0.0	2.9	0.0	0.0	-23.4
1/27/2010	27.1	0.6	0.0	0.0	2.9	0.1	22.9	27.1	0.1	0.0	2.9	0.0	0.0	-22.3
1/28/2010	27.5	0.4	0.0	0.0	2.9	0.1	22.6	27.5	0.1	0.0	2.9	0.0	0.0	-22.2
1/29/2010	28.2	0.2	0.0	0.0	2.9	0.1	23.1	28.2	0.1	0.0	2.9	0.0	0.0	-23.0
1/30/2010	27.3	0.4	0.0	0.0	2.9	0.1	23.4	27.3	0.1	0.0	2.9	0.0	0.0	-23.0
1/31/2010	29.4	0.7	0.0	0.0	2.9	0.1	22.6	29.4	0.1	0.0	2.9	0.0	0.0	-21.9
2/1/2010	32.8	0.4	0.0	0.0	2.9	0.1	25.9	32.8	0.1	0.0	2.9	0.0	0.0	-25.6
2/2/2010	33.1	0.2	0.0	0.0	2.9	0.1	27.8	33.1	0.1	0.0	2.9	0.0	0.0	-27.6
2/3/2010	33.3	0.6	0.0	0.0	2.9	0.1	27.9	33.3	0.1	0.0	2.9	0.0	0.0	-27.3
2/4/2010	33.7	0.7	0.0	0.0	2.9	0.1	28.3	33.7	0.1	0.0	2.9	0.0	0.0	-27.6
2/5/2010	33.5	1.0	0.0	0.0	2.9	0.1	28.6	33.5	0.1	0.0	2.9	0.0	0.0	-27.6
2/6/2010	25.6	0.6	0.0	0.0	2.9	0.1	27.4	25.6	0.1	0.0	2.9	0.0	0.0	-26.8
2/7/2010	27.3	0.7	0.0	0.0	2.9	0.1	21.8	27.3	0.1	0.0	2.9	0.0	0.0	-21.2
2/8/2010	27.6	0.6	0.0	0.0	2.9	0.1	22.9	27.6	0.1	0.0	2.9	0.0	0.0	-22.4
2/9/2010	27.6	0.9	0.0	0.0	2.9	0.1	22.9	27.6	0.1	0.0	2.9	0.0	0.0	-22.1
2/10/2010	26.6	0.2	0.0	0.0	2.9	0.1	22.9	26.6	0.1	0.0	2.9	0.0	0.0	-22.8
2/11/2010	24.1	0.3	0.0	0.0	2.9	0.1	21.2	24.1	0.1	0.0	2.9	0.0	0.0	-20.9
2/12/2010	24.4	2.0	0.0	0.0	2.9	0.1	19.8	24.4	0.1	0.0	2.9	0.0	0.0	-17.8
2/13/2010	25.1	0.5	0.0	0.0	2.9	0.1	20.1	25.1	0.1	0.0	2.9	0.0	0.0	-19.6
2/14/2010	26.9	1.0	0.0	0.0	2.9	0.1	21.0	26.9	0.1	0.0	2.9	0.0	0.0	-20.0
2/15/2010	24.8	0.4	0.0	0.0	2.9	0.1	22.5	24.8	0.1	0.0	2.9	0.0	0.0	-22.1

Table F1-3: RGCP Channel Water Budget Equation Analysis Segment 3

2010-12 Study Period

(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	MODFLOW Floodplain Recharge	Open Water Channel Evaporation	MODFLOW Riparian Evapo-transpiration	Diversions Authorized (None)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
2/16/2010	20.9	0.6	0.0	0.0	2.9	0.1	18.5	20.9	0.1	0.0	2.9	0.0	0.0	-17.9
2/17/2010	27.5	0.8	0.0	0.0	2.9	0.1	18.9	27.5	0.1	0.0	2.9	0.0	0.0	-18.1
2/18/2010	26.8	0.2	0.0	14.0	2.9	0.1	30.0	26.8	0.1	0.0	2.9	0.0	0.0	-15.7
2/19/2010	27.6	0.4	0.0	14.4	2.9	0.1	35.5	27.6	0.1	0.0	2.9	0.0	0.0	-20.8
2/20/2010	30.1	0.5	0.0	14.2	2.9	0.1	36.9	30.1	0.1	0.0	2.9	0.0	0.0	-22.2
2/21/2010	30.9	1.4	0.0	13.8	2.9	0.1	38.5	30.9	0.1	0.0	2.9	0.0	0.0	-23.4
2/22/2010	30.8	0.6	0.0	13.6	2.9	0.1	38.9	30.8	0.1	0.0	2.9	0.0	0.0	-24.7
2/23/2010	30.9	0.1	0.0	13.8	2.9	0.1	38.8	30.9	0.1	0.0	2.9	0.0	0.0	-25.0
2/24/2010	30.7	1.7	0.0	13.5	2.9	0.1	38.6	30.7	0.1	0.0	2.9	0.0	0.0	-23.5
2/25/2010	30.4	0.3	0.0	13.7	2.9	0.1	38.5	30.4	0.1	0.0	2.9	0.0	0.0	-24.5
2/26/2010	30.6	0.3	0.0	13.2	2.9	0.1	38.1	30.6	0.1	0.0	2.9	0.0	0.0	-24.6
2/27/2010	30.7	0.0	0.0	13.3	2.9	0.1	38.1	30.7	0.1	0.0	2.9	0.0	0.0	-24.9
2/28/2010	30.8	0.1	0.0	13.7	2.9	0.1	38.4	30.8	0.1	0.0	2.9	0.0	0.0	-24.6
3/1/2010	455.3	1.0	0.0	13.1	2.9	0.0	415.2	41.9	11.8	2.7	8.4	0.0	0.0	-7.5
3/2/2010	454.3	0.7	0.0	12.7	2.9	0.0	425.9	42.5	11.8	2.7	8.4	0.0	0.0	-20.6
3/3/2010	452.2	0.8	0.0	12.8	2.9	0.0	421.7	42.1	11.8	2.7	8.4	0.0	0.0	-18.0
3/4/2010	452.7	0.5	0.0	12.6	2.9	0.0	420.9	42.1	11.8	2.7	8.4	0.0	0.0	-17.0
3/5/2010	452.9	0.1	0.0	12.9	2.9	0.0	421.1	42.3	11.8	2.7	8.4	0.0	0.0	-17.4
3/6/2010	458.0	0.1	0.0	13.0	2.9	0.0	421.5	42.6	11.8	2.7	8.4	0.0	0.0	-12.9
3/7/2010	596.1	0.4	0.0	14.1	2.9	0.0	457.0	53.4	11.8	2.7	8.4	0.0	0.0	80.3
3/8/2010	733.7	0.3	0.0	17.0	2.9	0.0	585.7	63.8	11.8	2.7	8.4	0.0	0.0	81.5
3/9/2010	761.8	0.1	0.0	17.8	2.9	0.0	701.2	69.1	11.8	2.7	8.4	0.0	0.0	-10.6
3/10/2010	786.8	0.6	0.0	23.1	2.9	0.0	718.2	70.7	11.8	2.7	8.4	0.0	0.0	1.6
3/11/2010	915.2	0.7	0.0	26.5	2.9	0.0	827.7	80.2	11.8	2.7	8.4	0.0	0.0	14.6
3/12/2010	961.4	0.7	0.0	30.8	2.9	0.0	901.4	83.6	11.8	2.7	8.4	0.0	0.0	-12.1
3/13/2010	978.4	0.3	0.0	32.5	2.9	0.0	912.2	84.4	11.8	2.7	8.4	0.0	0.0	-5.3
3/14/2010	1114.9	0.3	0.0	46.4	2.9	0.0	977.7	90.9	11.8	2.7	8.4	0.0	0.0	73.2
3/15/2010	1238.5	0.6	0.0	54.0	2.9	0.0	1194.7	100.5	11.8	2.7	8.4	0.0	0.0	-22.0
3/16/2010	1205.2	0.0	0.0	57.0	2.9	0.0	1189.4	99.3	11.8	2.7	8.4	0.0	0.0	-46.5
3/17/2010	1400.6	0.0	0.0	82.0	2.9	0.0	1204.7	105.8	11.8	2.7	8.4	0.0	0.0	152.1
3/18/2010	1678.6	0.6	0.0	101.0	2.9	0.0	1607.5	122.9	11.8	2.7	8.4	0.0	0.0	29.8
3/19/2010	1631.1	0.2	0.0	98.9	2.9	0.0	1673.1	122.9	11.8	2.7	8.4	0.0	0.0	-85.7
3/20/2010	1477.7	0.5	0.0	75.4	2.9	0.0	1505.8	115.0	11.8	2.7	8.4	0.0	0.0	-87.1
3/21/2010	1472.3	0.0	0.0	75.2	2.9	0.0	1401.5	112.8	11.8	2.7	8.4	0.0	0.0	13.2
3/22/2010	1530.6	0.2	0.0	90.9	2.9	0.0	1471.5	116.2	11.8	2.7	8.4	0.0	0.0	14.2
3/23/2010	1522.9	0.0	0.0	89.2	2.9	0.0	1539.5	117.5	11.8	2.7	8.4	0.0	0.0	-64.7
3/24/2010	1578.7	0.1	0.0	96.9	2.9	0.0	1527.1	119.0	11.8	2.7	8.4	0.0	0.0	9.7
3/25/2010	1714.5	0.0	0.0	116.7	2.9	0.0	1614.1	124.9	11.8	2.7	8.4	0.0	0.0	72.2
3/26/2010	1598.4	0.0	0.0	107.2	2.9	0.0	1693.6	123.1	11.8	2.7	8.4	0.0	0.0	-131.0
3/27/2010	1459.4	1.0	0.0	79.6	2.9	0.0	1489.0	114.9	11.8	2.7	8.4	0.0	0.0	-83.9
3/28/2010	1436.2	0.4	0.0	0.0	2.9	0.0	1332.5	111.2	11.8	2.7	8.4	0.0	0.0	-26.9
3/29/2010	1630.4	0.2	0.0	116.3	2.9	0.0	1520.9	121.2	11.8	2.7	8.4	0.0	0.0	85.0
3/30/2010	1803.9	0.0	0.0	118.3	2.9	0.0	1756.8	130.6	11.8	2.7	8.4	0.0	0.0	14.9
3/31/2010	1752.3	0.1	0.0	118.6	2.9	0.0	1779.7	129.7	11.8	2.7	8.4	0.0	0.0	-58.4
4/1/2010	1590.5	0.1	0.0	111.0	2.9	0.0	1653.9	122.7	11.8	5.9	8.4	0.0	0.0	-98.2
4/2/2010	1367.7	0.5	0.0	92.2	2.9	0.0	1447.1	111.8	11.8	5.9	8.4	0.0	0.0	-121.7
4/3/2010	1287.8	0.4	0.0	80.6	2.9	0.0	1302.3	106.3	11.8	5.9	8.4	0.0	0.0	-63.1
4/4/2010	1293.6	0.5	0.0	79.8	2.9	0.0	1264.5	105.7	11.8	5.9	8.4	0.0	0.0	-19.5
4/5/2010	1333.0	0.7	0.0	87.5	2.9	0.0	1294.8	107.7	11.8	5.9	8.4	0.0	0.0	-4.5
4/6/2010	1417.2	0.8	0.0	91.5	2.9	0.0	1364.2	112.0	11.8	5.9	8.4	0.0	0.0	10.2
4/7/2010	1484.6	0.1	0.0	107.4	2.9	0.0	1457.4	116.1	11.8	5.9	8.4	0.0	0.0	-4.5

Table F1-3: RGCP Channel Water Budget Equation Analysis Segment 3

2010-12 Study Period

(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	MODFLOW Floodplain Recharge	Open Water Channel Evaporation	MODFLOW Riparian Evapo-transpiration	Diversions Authorized (None)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
4/8/2010	1528.1	0.0	0.0	109.9	2.9	0.0	1519.8	118.7	11.8	5.9	8.4	0.0	0.0	-23.6
4/9/2010	1376.3	0.0	0.0	107.8	2.9	0.0	1451.1	112.8	11.8	5.9	8.4	0.0	0.0	-102.9
4/10/2010	1139.2	0.0	14.7	79.4	2.9	0.0	1236.2	100.6	11.8	5.9	8.4	0.0	0.0	-126.6
4/11/2010	1107.5	0.6	0.0	69.2	2.9	0.0	1086.8	96.3	11.8	5.9	8.4	0.0	0.0	-28.9
4/12/2010	1107.7	0.7	0.0	76.0	2.9	0.0	1075.2	96.1	11.8	5.9	8.4	0.0	0.0	-10.0
4/13/2010	1111.5	0.1	0.0	72.4	2.9	0.0	1116.9	97.3	11.8	5.9	8.4	0.0	0.0	-53.2
4/14/2010	1161.2	0.1	0.0	75.3	2.9	0.0	1117.1	99.0	11.8	5.9	8.4	0.0	0.0	-2.6
4/15/2010	1141.0	0.9	0.0	83.4	2.9	0.0	1145.4	99.1	11.8	5.9	8.4	0.0	0.0	-42.3
4/16/2010	987.4	0.2	0.0	72.6	2.9	0.0	1052.9	91.7	11.8	5.9	8.4	0.0	0.0	-107.5
4/17/2010	607.5	0.1	148.9	74.4	2.9	0.0	833.8	70.7	11.8	5.9	8.4	0.0	0.0	-96.6
4/18/2010	529.2	0.1	0.0	59.7	2.9	0.0	551.2	56.5	11.8	5.9	8.4	0.0	0.0	-41.9
4/19/2010	455.4	0.1	0.0	33.4	2.9	0.0	479.2	48.4	11.8	5.9	8.4	0.0	0.0	-61.8
4/20/2010	471.5	0.0	0.0	41.2	2.9	0.0	479.7	53.2	11.8	5.9	8.4	0.0	0.0	-43.3
4/21/2010	409.8	0.0	0.0	39.6	2.9	0.0	441.4	44.4	11.8	5.9	8.4	0.0	0.0	-59.6
4/22/2010	394.1	0.6	0.0	36.2	2.9	0.0	402.8	41.5	11.8	5.9	8.4	0.0	0.0	-36.4
4/23/2010	442.3	0.5	0.0	35.7	2.9	0.0	402.6	47.4	11.8	5.9	8.4	0.0	0.0	5.4
4/24/2010	453.0	0.4	0.0	34.3	2.9	0.0	427.5	46.9	11.8	5.9	8.4	0.0	0.0	-9.7
4/25/2010	557.7	0.3	0.0	33.9	2.9	0.0	464.1	56.2	11.8	5.9	8.4	0.0	0.0	48.4
4/26/2010	590.0	0.2	0.0	37.4	2.9	0.0	548.2	60.9	11.8	5.9	8.4	0.0	0.0	-4.6
4/27/2010	591.9	0.5	0.0	34.7	2.9	0.0	581.8	62.6	11.8	5.9	8.4	0.0	0.0	-40.4
4/28/2010	568.4	0.0	0.0	35.0	2.9	0.0	554.1	59.9	11.8	5.9	8.4	0.0	0.0	-33.7
4/29/2010	633.0	0.1	0.0	35.6	2.9	0.0	559.0	63.6	11.8	5.9	8.4	0.0	0.0	22.9
4/30/2010	630.8	0.3	0.0	37.8	2.9	0.0	601.2	64.6	11.8	5.9	8.4	0.0	0.0	-20.1
5/1/2010	737.8	0.0	0.0	42.1	2.9	0.0	693.1	73.5	11.8	9.3	8.4	0.0	0.0	-13.2
5/2/2010	659.2	1.1	0.0	39.3	2.9	0.0	693.6	69.7	11.8	9.3	8.4	0.0	0.0	-90.2
5/3/2010	608.2	0.9	0.0	38.8	2.9	0.0	596.7	63.6	11.8	9.3	8.4	0.0	0.0	-39.0
5/4/2010	625.2	0.2	0.0	40.0	2.9	0.0	587.1	64.4	11.8	9.3	8.4	0.0	0.0	-12.5
5/5/2010	756.3	0.3	0.0	42.5	2.9	0.0	645.8	72.6	11.8	9.3	8.4	0.0	0.0	54.2
5/6/2010	828.2	0.3	0.0	46.0	2.9	0.0	765.1	79.1	11.8	9.3	8.4	0.0	0.0	3.7
5/7/2010	779.6	0.7	0.0	46.2	2.9	0.0	810.8	78.5	11.8	9.3	8.4	0.0	0.0	-89.2
5/8/2010	719.4	0.0	0.0	43.4	2.9	0.0	731.8	73.4	11.8	9.3	8.4	0.0	0.0	-68.9
5/9/2010	694.2	0.0	0.0	40.6	2.9	0.0	668.9	69.9	11.8	9.3	8.4	0.0	0.0	-30.5
5/10/2010	719.1	0.0	0.0	40.4	2.9	0.0	683.4	71.6	11.8	9.3	8.4	0.0	0.0	-22.0
5/11/2010	714.0	0.4	0.0	40.9	2.9	0.0	695.4	71.7	11.8	9.3	8.4	0.0	0.0	-38.4
5/12/2010	738.5	0.0	0.0	41.1	2.9	0.0	682.8	72.1	11.8	9.3	8.4	0.0	0.0	-1.8
5/13/2010	911.6	0.1	0.0	54.3	2.9	0.0	768.3	81.7	11.8	9.3	8.4	0.0	0.0	89.5
5/14/2010	905.1	0.6	0.0	65.2	2.9	0.0	918.5	85.5	11.8	9.3	8.4	0.0	0.0	-59.6
5/15/2010	952.8	0.7	0.0	62.4	2.9	0.0	947.4	87.9	11.8	9.3	8.4	0.0	0.0	-45.8
5/16/2010	1071.0	1.1	0.0	68.3	2.9	0.0	969.2	92.5	11.8	9.3	8.4	0.0	0.0	52.2
5/17/2010	1098.9	0.3	0.0	71.4	2.9	0.0	1081.9	96.1	11.8	9.3	8.4	0.0	0.0	-33.9
5/18/2010	1032.4	0.3	0.0	69.3	2.9	0.0	1055.4	93.0	11.8	9.3	8.4	0.0	0.0	-72.9
5/19/2010	865.8	0.0	18.2	71.6	2.9	0.0	958.5	84.2	11.8	9.3	8.4	0.0	0.0	-113.6
5/20/2010	690.4	0.3	0.0	46.7	2.9	0.0	728.8	69.8	11.8	9.3	8.4	0.0	0.0	-87.7
5/21/2010	618.7	1.0	0.0	49.5	2.9	0.0	640.9	63.8	11.8	9.3	8.4	0.0	0.0	-62.1
5/22/2010	738.0	0.1	0.0	47.5	2.9	0.0	650.3	69.5	11.8	9.3	8.4	0.0	0.0	39.3
5/23/2010	907.0	0.8	0.0	51.0	2.9	0.0	810.7	81.5	11.8	9.3	8.4	0.0	0.0	40.1
5/24/2010	861.0	0.2	0.0	45.5	2.9	0.0	853.6	80.6	11.8	9.3	8.4	0.0	0.0	-54.0
5/25/2010	935.8	1.0	0.0	43.4	2.9	0.0	848.1	83.2	11.8	9.3	8.4	0.0	0.0	22.4
5/26/2010	983.0	0.1	0.0	61.5	2.9	0.0	938.4	87.3	11.8	9.3	8.4	0.0	0.0	-7.4
5/27/2010	1070.1	0.6	0.0	61.6	2.9	0.0	1014.6	92.1	11.8	9.3	8.4	0.0	0.0	-0.9
5/28/2010	993.8	0.6	0.0	65.4	2.9	0.0	1039.3	90.0	11.8	9.3	8.4	0.0	0.0	-96.0



Table F1-3: RGCP Channel Water Budget Equation Analysis Segment 3

2010-12 Study Period

(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	MODFLOW Floodplain Recharge	Open Water Channel Evaporation	MODFLOW Riparian Evapo- transpiration	Diversions Authorized (None)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
5/29/2010	894.1	0.3	0.0	51.3	2.9	0.0	916.4	82.9	11.8	9.3	8.4	0.0	0.0	-80.1
5/30/2010	831.4	0.0	0.0	49.8	2.9	0.0	820.9	77.6	11.8	9.3	8.4	0.0	0.0	-43.9
5/31/2010	801.8	0.7	0.0	48.2	2.9	0.0	786.4	75.1	11.8	9.3	8.4	0.0	0.0	-37.2
6/1/2010	752.4	0.4	0.0	46.0	2.9	0.0	767.9	72.2	11.8	9.5	8.4	0.0	0.0	-68.2
6/2/2010	711.0	0.3	0.0	40.2	2.9	0.0	687.7	67.6	11.8	9.5	8.4	0.0	0.0	-30.5
6/3/2010	966.5	0.6	0.0	52.4	2.9	0.0	766.1	80.8	11.8	9.5	8.4	0.0	0.0	145.9
6/4/2010	1039.4	0.3	0.0	64.1	2.9	0.0	995.8	89.1	11.8	9.5	8.4	0.0	0.0	-7.8
6/5/2010	1192.0	0.2	0.0	62.4	2.9	0.0	1093.6	96.4	11.8	9.5	8.4	0.0	0.0	37.9
6/6/2010	1410.4	0.7	0.0	103.6	2.9	0.0	1327.6	108.4	11.8	9.5	8.4	0.0	0.0	52.0
6/7/2010	1505.0	1.6	0.0	109.2	2.9	0.0	1487.0	114.5	11.8	9.5	8.4	0.0	0.0	-12.5
6/8/2010	1630.4	0.7	0.0	107.8	2.9	0.0	1548.5	119.5	11.8	9.5	8.4	0.0	0.0	44.3
6/9/2010	1763.5	0.2	0.0	143.3	2.9	0.0	1751.3	127.2	11.8	9.5	8.4	0.0	0.0	1.7
6/10/2010	1759.6	2.2	0.0	130.9	2.9	0.0	1793.7	127.9	11.8	9.5	8.4	0.0	0.0	-55.7
6/11/2010	1654.7	0.4	0.0	138.6	2.9	0.0	1723.2	123.5	11.8	9.5	8.4	0.0	0.0	-79.8
6/12/2010	1519.9	0.6	0.0	116.8	2.9	0.0	1569.0	116.4	11.8	9.5	8.4	0.0	0.0	-74.9
6/13/2010	1708.7	0.1	0.0	130.2	2.9	0.0	1625.1	123.2	11.8	9.5	8.4	0.0	0.0	64.0
6/14/2010	1785.1	1.2	0.0	136.9	2.9	0.0	1788.5	128.5	11.8	9.5	8.4	0.0	0.0	-20.6
6/15/2010	1850.4	2.0	0.0	138.2	2.9	0.0	1854.7	131.5	11.8	9.5	8.4	0.0	0.0	-22.3
6/16/2010	1924.6	1.2	0.0	141.1	2.9	0.0	1904.7	134.6	11.8	9.5	8.4	0.0	0.0	0.8
6/17/2010	1824.0	1.6	0.0	148.2	2.9	0.0	1900.5	131.9	11.8	9.5	8.4	0.0	0.0	-85.4
6/18/2010	1815.9	2.9	0.0	143.5	2.9	0.0	1812.8	129.9	11.8	9.5	8.4	0.0	0.0	-7.1
6/19/2010	1714.5	0.9	0.0	132.7	2.9	0.0	1786.0	126.5	11.8	9.5	8.4	0.0	0.0	-91.2
6/20/2010	1612.2	1.0	0.0	122.7	2.9	0.0	1656.2	121.0	11.8	9.5	8.4	0.0	0.0	-68.1
6/21/2010	1599.1	0.4	0.0	121.9	2.9	0.0	1610.9	119.6	11.8	9.5	8.4	0.0	0.0	-35.8
6/22/2010	1571.0	0.3	0.0	119.2	2.9	0.0	1591.3	118.2	11.8	9.5	8.4	0.0	0.0	-45.6
6/23/2010	1636.6	1.0	0.0	117.7	2.9	0.0	1611.0	120.3	11.8	9.5	8.4	0.0	0.0	-2.8
6/24/2010	1620.1	1.1	0.0	117.2	2.9	0.0	1642.8	120.5	11.8	9.5	8.4	0.0	0.0	-51.6
6/25/2010	1601.8	0.6	0.0	122.3	2.9	0.0	1615.5	119.2	11.8	9.5	8.4	0.0	0.0	-36.7
6/26/2010	1781.5	0.6	0.0	135.1	2.9	0.0	1718.0	126.3	11.8	9.5	8.4	0.0	0.0	46.0
6/27/2010	1940.8	2.4	0.0	155.0	2.9	0.0	1918.6	134.4	11.8	9.5	8.4	0.0	0.0	18.4
6/28/2010	1968.9	1.7	0.0	153.0	2.9	0.0	1991.6	136.4	11.8	9.5	8.4	0.0	0.0	-31.3
6/29/2010	2043.7	3.0	0.0	164.4	2.9	0.0	2049.8	139.5	11.8	9.5	8.4	0.0	0.0	-4.9
6/30/2010	1611.0	1.8	64.5	139.5	2.9	0.0	1817.9	123.4	11.8	9.5	8.4	0.0	0.0	-151.2
7/1/2010	1316.9	1.0	12.9	95.1	2.9	0.0	1427.8	106.6	11.8	7.1	8.4	0.0	0.0	-132.9
7/2/2010	1258.7	3.1	0.0	89.2	2.9	0.0	1239.0	100.5	11.8	7.1	8.4	0.0	0.0	-12.8
7/3/2010	1153.6	0.8	0.0	90.7	2.9	0.0	1229.1	96.7	11.8	7.1	8.4	0.0	0.0	-105.0
7/4/2010	1098.6	1.3	0.0	67.9	2.9	0.0	1082.6	91.2	11.8	7.1	8.4	0.0	0.0	-30.3
7/5/2010	1162.0	3.2	0.0	65.6	2.9	0.0	1019.3	91.6	11.8	7.1	8.4	0.0	0.0	95.6
7/6/2010	1478.4	0.8	0.0	94.1	2.9	0.0	1334.5	109.1	11.8	7.1	8.4	0.0	0.0	105.4
7/7/2010	1642.7	1.2	0.0	105.5	2.9	0.0	1583.9	119.1	11.8	7.1	8.4	0.0	0.0	22.0
7/8/2010	1867.5	1.4	0.0	130.2	2.9	0.0	1795.5	129.7	11.8	7.1	8.4	0.0	0.0	49.6
7/9/2010	1700.9	4.0	0.0	125.7	2.9	0.0	1787.3	124.8	11.8	7.1	8.4	0.0	0.0	-105.7
7/10/2010	1605.1	3.1	0.0	112.9	2.9	0.0	1656.7	119.4	11.8	7.1	8.4	0.0	0.0	-79.3
7/11/2010	1729.7	1.9	0.0	130.0	2.9	0.0	1673.3	123.3	11.8	7.1	8.4	0.0	0.0	40.8
7/12/2010	1659.9	1.1	0.0	229.8	2.9	0.0	1818.5	123.9	11.8	7.1	8.4	0.0	0.0	-75.9
7/13/2010	1459.8	1.3	0.0	105.6	2.9	0.0	1560.8	112.9	11.8	7.1	8.4	0.0	0.0	-131.3
7/14/2010	1525.9	1.0	0.0	129.1	2.9	0.0	1482.0	113.7	11.8	7.1	8.4	0.0	0.0	36.1
7/15/2010	1476.5	2.2	0.0	116.2	2.9	0.0	1511.6	112.9	11.8	7.1	8.4	0.0	0.0	-53.9
7/16/2010	1423.4	1.3	0.0	117.9	2.9	0.0	1439.7	109.7	11.8	7.1	8.4	0.0	0.0	-31.1
7/17/2010	1366.3	4.2	0.0	99.0	2.9	0.0	1402.8	107.2	11.8	7.1	8.4	0.0	0.0	-64.9
7/18/2010	1417.4	1.2	0.0	108.1	2.9	0.0	1406.0	109.0	11.8	7.1	8.4	0.0	0.0	-12.5

Table F1-3: RGCP Channel Water Budget Equation Analysis Segment 3

2010-12 Study Period

(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	MODFLOW Floodplain Recharge	Open Water Channel Evaporation	MODFLOW Riparian Evapo- transpiration	Diversions Authorized (None)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
7/19/2010	1411.2	1.7	0.0	102.2	2.9	0.0	1409.1	108.7	11.8	7.1	8.4	0.0	0.0	-27.0
7/20/2010	1416.4	1.6	0.0	103.1	2.9	0.0	1417.8	109.1	11.8	7.1	8.4	0.0	0.0	-30.1
7/21/2010	1536.4	3.2	0.0	118.8	2.9	0.0	1485.5	114.1	11.8	7.1	8.4	0.0	0.0	34.5
7/22/2010	1455.1	1.3	0.0	119.3	2.9	0.0	1508.3	112.0	11.8	7.1	8.4	0.0	0.0	-68.8
7/23/2010	1369.8	3.0	0.0	125.7	2.9	0.0	1431.0	107.8	11.8	7.1	8.4	0.0	0.0	-64.6
7/24/2010	1464.8	1.0	0.0	186.2	2.9	0.0	1494.4	112.0	11.8	7.1	8.4	0.0	0.0	21.3
7/25/2010	1215.4	1.3	71.9	146.3	2.9	0.0	1436.5	102.9	11.8	7.1	8.4	0.0	0.0	-128.8
7/26/2010	1630.7	3.0	0.0	270.2	2.9	0.0	1436.9	115.5	11.8	7.1	8.4	0.0	0.0	327.2
7/27/2010	1490.6	1.3	69.7	272.9	2.9	0.0	1836.1	118.9	11.8	7.1	8.4	0.0	0.0	-144.8
7/28/2010	1159.4	2.1	0.0	119.6	2.9	0.0	1271.2	97.0	11.8	7.1	8.4	0.0	0.0	-111.3
7/29/2010	1229.8	4.4	0.0	132.9	2.9	0.0	1155.6	97.2	11.8	7.1	8.4	0.0	0.0	90.0
7/30/2010	1287.3	1.9	0.0	149.2	2.9	0.0	1361.6	103.6	11.8	7.1	8.4	0.0	0.0	-51.2
7/31/2010	1130.3	0.8	0.0	120.0	2.9	0.0	1245.0	95.9	11.8	7.1	8.4	0.0	0.0	-114.1
8/1/2010	1188.5	4.4	0.0	120.9	2.9	0.0	1139.6	95.4	11.8	6.7	8.4	0.0	0.0	54.8
8/2/2010	1287.5	4.2	0.0	118.2	2.9	0.0	1299.1	102.3	11.8	6.7	8.4	0.0	0.0	-15.4
8/3/2010	1270.9	3.1	0.0	102.8	2.9	0.0	1290.4	101.6	11.8	6.7	8.4	0.0	0.0	-39.1
8/4/2010	1260.2	1.2	0.0	93.1	2.9	0.0	1247.1	100.4	11.8	6.7	8.4	0.0	0.0	-16.9
8/5/2010	1306.1	2.7	0.0	101.7	2.9	0.0	1304.2	103.2	11.8	6.7	8.4	0.0	0.0	-20.8
8/6/2010	1220.4	2.4	0.0	85.8	2.9	0.0	1254.4	99.4	11.8	6.7	8.4	0.0	0.0	-69.1
8/7/2010	1277.4	3.0	0.0	83.7	2.9	0.0	1229.7	100.7	11.8	6.7	8.4	0.0	0.0	9.9
8/8/2010	1418.7	0.9	0.0	107.1	2.9	0.0	1361.7	107.9	11.8	6.7	8.4	0.0	0.0	33.2
8/9/2010	1447.2	3.2	0.0	107.5	2.9	0.0	1455.4	110.7	11.8	6.7	8.4	0.0	0.0	-32.1
8/10/2010	1516.8	2.3	0.0	113.6	2.9	0.0	1475.6	113.3	11.8	6.7	8.4	0.0	0.0	19.9
8/11/2010	1576.3	3.2	0.0	129.5	2.9	0.0	1588.2	117.5	11.8	6.7	8.4	0.0	0.0	-20.5
8/12/2010	1458.2	4.2	0.0	116.2	2.9	0.0	1529.8	112.8	11.8	6.7	8.4	0.0	0.0	-88.0
8/13/2010	1387.7	2.8	0.0	117.7	2.9	0.0	1418.9	108.4	11.8	6.7	8.4	0.0	0.0	-43.1
8/14/2010	1317.5	6.8	0.0	123.3	2.9	0.0	1377.0	105.4	11.8	6.7	8.4	0.0	0.0	-58.7
8/15/2010	1489.0	4.3	0.0	112.1	2.9	0.0	1410.6	111.5	11.8	6.7	8.4	0.0	0.0	59.4
8/16/2010	1555.4	1.6	0.0	124.1	2.9	0.0	1557.5	116.6	11.8	6.7	8.4	0.0	0.0	-16.9
8/17/2010	1542.6	2.9	0.0	122.3	2.9	0.0	1558.5	116.1	11.8	6.7	8.4	0.0	0.0	-30.7
8/18/2010	1506.0	2.1	0.0	129.3	2.9	0.0	1542.9	114.7	11.8	6.7	8.4	0.0	0.0	-44.0
8/19/2010	1504.3	2.2	0.0	137.1	2.9	0.0	1537.3	114.3	11.8	6.7	8.4	0.0	0.0	-32.0
8/20/2010	1527.3	5.3	0.0	127.1	2.9	0.0	1543.8	115.1	11.8	6.7	8.4	0.0	0.0	-23.2
8/21/2010	1542.1	1.1	0.0	117.7	2.9	0.0	1541.8	115.6	11.8	6.7	8.4	0.0	0.0	-20.4
8/22/2010	1664.3	4.5	0.0	138.3	2.9	0.0	1628.1	121.0	11.8	6.7	8.4	0.0	0.0	34.0
8/23/2010	1713.9	3.2	0.0	138.3	2.9	0.0	1731.5	124.5	11.8	6.7	8.4	0.0	0.0	-24.5
8/24/2010	1662.3	2.3	0.0	136.8	2.9	0.0	1695.7	122.3	11.8	6.7	8.4	0.0	0.0	-40.4
8/25/2010	1628.6	3.7	0.0	250.6	2.9	0.0	1780.9	122.8	11.8	6.7	8.4	0.0	0.0	-44.7
8/26/2010	1385.1	1.8	34.3	132.2	2.9	0.0	1554.5	110.9	11.8	6.7	8.4	0.0	0.0	-135.9
8/27/2010	1202.9	3.7	0.0	105.6	2.9	0.0	1251.7	98.8	11.8	6.7	8.4	0.0	0.0	-62.2
8/28/2010	1170.2	1.8	0.0	97.5	2.9	0.0	1165.2	95.8	11.8	6.7	8.4	0.0	0.0	-15.3
8/29/2010	1138.5	0.8	0.0	102.9	2.9	0.0	1156.4	94.7	11.8	6.7	8.4	0.0	0.0	-32.8
8/30/2010	1127.9	3.1	0.0	88.7	2.9	0.0	1158.2	94.3	11.8	6.7	8.4	0.0	0.0	-56.6
8/31/2010	908.7	2.4	45.2	84.6	2.9	0.0	1041.4	83.9	11.8	6.7	8.4	0.0	0.0	-108.2
9/1/2010	531.7	0.6	149.7	75.3	2.9	0.0	759.7	59.5	11.8	5.4	8.4	0.0	0.0	-84.4
9/2/2010	288.5	3.1	116.5	62.2	2.9	0.0	470.0	33.0	11.8	5.4	8.4	0.0	0.0	-55.4
9/3/2010	254.9	1.8	0.0	59.6	2.9	0.0	302.4	21.0	11.8	5.4	8.4	0.0	0.0	-29.7
9/4/2010	377.3	3.1	0.0	61.6	2.9	0.0	298.6	29.6	11.8	5.4	8.4	0.0	0.0	91.1
9/5/2010	734.3	2.6	0.0	66.4	2.9	0.0	436.2	58.0	11.8	5.4	8.4	0.0	0.0	286.6
9/6/2010	858.8	3.4	0.0	63.0	2.9	0.0	857.2	77.1	11.8	5.4	8.4	0.0	0.0	-31.8
9/7/2010	775.1	3.6	0.0	57.9	2.9	0.0	814.9	72.5	11.8	5.4	8.4	0.0	0.0	-73.5

Table F1-3: RGCP Channel Water Budget Equation Analysis Segment 3

2010-12 Study Period

(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	MODFLOW Floodplain Recharge	Open Water Channel Evaporation	MODFLOW Riparian Evapo- transpiration	Diversions Authorized (None)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
9/8/2010	727.9	1.3	0.0	57.3	2.9	0.0	724.5	67.5	11.8	5.4	8.4	0.0	0.0	-28.2
9/9/2010	735.0	1.3	0.0	57.1	2.9	0.0	738.0	68.3	11.8	5.4	8.4	0.0	0.0	-35.4
9/10/2010	719.4	1.6	0.0	56.1	2.9	0.0	745.3	67.6	11.8	5.4	8.4	0.0	0.0	-58.4
9/11/2010	817.0	2.0	0.0	58.9	2.9	0.0	778.0	73.7	11.8	5.4	8.4	0.0	0.0	3.5
9/12/2010	809.3	3.7	0.0	59.2	2.9	0.0	766.6	72.1	11.8	5.4	8.4	0.0	0.0	11.0
9/13/2010	855.2	1.9	0.0	66.7	2.9	0.0	845.3	77.2	11.8	5.4	8.4	0.0	0.0	-21.2
9/14/2010	704.1	2.1	7.8	57.3	2.9	0.0	772.1	67.9	11.8	5.4	8.4	0.0	0.0	-91.3
9/15/2010	608.6	1.3	0.0	58.7	2.9	0.0	659.5	60.0	11.8	5.4	8.4	0.0	0.0	-73.5
9/16/2010	532.3	2.3	0.0	51.9	2.9	0.0	577.9	53.6	11.8	5.4	8.4	0.0	0.0	-67.6
9/17/2010	468.7	1.0	0.0	49.8	2.9	0.0	511.4	47.8	11.8	5.4	8.4	0.0	0.0	-62.3
9/18/2010	391.0	1.9	14.0	48.0	2.9	0.0	455.8	40.1	11.8	5.4	8.4	0.0	0.0	-63.6
9/19/2010	439.0	1.9	0.0	45.8	2.9	0.0	400.3	39.6	11.8	5.4	8.4	0.0	0.0	24.2
9/20/2010	475.2	2.1	0.0	44.8	2.9	0.0	450.7	45.6	11.8	5.4	8.4	0.0	0.0	3.3
9/21/2010	422.0	0.3	0.0	47.7	2.9	0.0	467.5	42.6	11.8	5.4	8.4	0.0	0.0	-62.7
9/22/2010	463.9	2.3	0.0	46.0	2.9	0.0	425.2	42.5	11.8	5.4	8.4	0.0	0.0	21.9
9/23/2010	590.1	2.4	0.0	46.9	2.9	0.0	500.1	54.7	11.8	5.4	8.4	0.0	0.0	62.1
9/24/2010	645.0	0.9	0.0	45.1	2.9	0.0	611.5	61.2	11.8	5.4	8.4	0.0	0.0	-4.3
9/25/2010	495.0	2.3	34.1	43.7	2.9	0.0	575.7	51.5	11.8	5.4	8.4	0.0	0.0	-74.6
9/26/2010	390.1	0.8	32.3	42.2	2.9	0.0	467.5	41.0	11.8	5.4	8.4	0.0	0.0	-65.7
9/27/2010	341.9	0.2	0.0	41.5	2.9	0.0	377.6	31.8	11.8	5.4	8.4	0.0	0.0	-48.4
9/28/2010	335.5	0.1	0.0	41.1	2.9	0.0	348.9	30.7	11.8	5.4	8.4	0.0	0.0	-25.5
9/29/2010	327.7	1.0	0.0	41.7	2.9	0.0	343.0	29.9	11.8	5.4	8.4	0.0	0.0	-25.1
9/30/2010	345.2	1.0	0.0	42.1	2.9	0.0	335.3	30.2	11.8	5.4	8.4	0.0	0.0	0.2
10/1/2010	782.8	1.6	0.0	41.0	2.9	0.0	396.5	60.5	11.8	0.0	8.4	0.0	0.0	351.3
10/2/2010	753.1	0.4	0.0	40.3	2.9	0.0	756.8	70.4	11.8	0.0	8.4	0.0	0.0	-50.6
10/3/2010	728.4	1.2	0.0	39.4	2.9	0.0	712.7	67.9	11.8	0.0	8.4	0.0	0.0	-28.8
10/4/2010	837.0	1.3	0.0	38.0	2.9	0.0	739.3	73.7	11.8	0.0	8.4	0.0	0.0	46.1
10/5/2010	837.7	1.1	0.0	39.0	2.9	0.0	806.9	75.5	11.8	0.0	8.4	0.0	0.0	-21.9
10/6/2010	818.8	0.3	0.0	39.4	2.9	0.0	801.0	74.8	11.8	0.0	8.4	0.0	0.0	-34.5
10/7/2010	722.1	0.3	0.0	36.9	2.9	0.0	737.3	68.4	11.8	0.0	8.4	0.0	0.0	-63.6
10/8/2010	224.9	0.7	23.4	35.4	2.9	0.0	286.6	62.3	11.8	0.0	8.4	0.0	0.0	-81.7
10/9/2010	151.3	0.8	21.0	34.3	2.9	0.0	209.5	56.0	11.8	0.0	8.4	0.0	0.0	-75.3
10/10/2010	101.4	0.5	16.4	33.4	2.9	0.0	154.0	51.5	11.8	0.0	8.4	0.0	0.0	-71.1
10/11/2010	71.2	1.7	3.9	31.6	2.9	0.0	109.6	47.9	11.8	0.0	8.4	0.0	0.0	-66.3
10/12/2010	64.6	0.4	0.0	29.7	2.9	0.0	89.6	46.7	11.8	0.0	8.4	0.0	0.0	-58.9
10/13/2010	61.1	1.1	0.0	27.8	2.9	0.0	83.4	46.2	11.8	0.0	8.4	0.0	0.0	-57.0
10/14/2010	58.1	0.7	0.0	35.1	2.9	0.0	83.7	46.1	11.8	0.0	8.4	0.0	0.0	-53.1
10/15/2010	56.5	1.3	0.0	62.3	2.9	0.0	100.8	47.0	11.8	0.0	8.4	0.0	0.0	-44.9
10/16/2010	56.3	0.3	0.0	94.6	2.9	0.0	130.4	48.3	11.8	0.0	8.4	0.0	0.0	-44.8
10/17/2010	56.5	3.2	0.0	102.8	2.9	0.0	145.7	48.8	11.8	0.0	8.4	0.0	0.0	-49.1
10/18/2010	54.0	0.9	0.0	122.9	2.9	0.0	161.3	49.3	11.8	0.0	8.4	0.0	0.0	-50.1
10/19/2010	49.4	2.0	0.0	141.7	2.9	0.0	176.3	49.4	11.8	0.0	8.4	0.0	0.0	-49.8
10/20/2010	46.5	2.4	0.0	156.6	2.9	0.0	188.0	46.5	11.8	0.0	8.4	0.0	0.0	-46.3
10/21/2010	45.6	1.8	0.0	167.8	2.9	0.0	198.0	45.6	11.8	0.0	8.4	0.0	0.0	-45.6
10/22/2010	45.1	1.7	0.0	172.9	2.9	0.0	203.9	45.1	11.8	0.0	8.4	0.0	0.0	-46.6
10/23/2010	44.9	1.7	0.0	178.0	2.9	0.0	208.6	44.9	11.8	0.0	8.4	0.0	0.0	-46.1
10/24/2010	44.1	1.8	0.0	188.3	2.9	0.0	216.6	44.1	11.8	0.0	8.4	0.0	0.0	-43.8
10/25/2010	42.2	1.0	0.0	196.3	2.9	0.0	223.9	42.2	11.8	0.0	8.4	0.0	0.0	-43.9
10/26/2010	41.7	1.8	0.0	200.9	2.9	0.0	228.1	41.7	11.8	0.0	8.4	0.0	0.0	-42.7
10/27/2010	40.6	1.4	0.0	210.5	2.9	0.0	235.5	40.6	11.8	0.0	8.4	0.0	0.0	-40.8
10/28/2010	39.9	2.0	0.0	218.2	2.9	0.0	242.6	39.9	11.8	0.0	8.4	0.0	0.0	-39.6

Table F1-3: RGCP Channel Water Budget Equation Analysis Segment 3

2010-12 Study Period

(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	MODFLOW Floodplain Recharge	Open Water Channel Evaporation	MODFLOW Riparian Evapo- transpiration	Diversions Authorized (None)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
10/29/2010	39.0	0.9	0.0	230.5	2.9	0.0	252.7	39.0	11.8	0.0	8.4	0.0	0.0	-38.5
10/30/2010	38.9	0.7	0.0	243.0	2.9	0.0	264.1	38.9	11.8	0.0	8.4	0.0	0.0	-37.6
10/31/2010	38.4	0.4	0.0	251.7	2.9	0.0	273.1	38.4	11.8	0.0	8.4	0.0	0.0	-38.2
11/1/2010	38.1	1.2	0.0	279.3	2.9	0.1	294.7	38.1	0.1	0.0	2.9	0.0	0.0	-14.3
11/2/2010	37.5	0.3	0.0	290.9	2.9	0.1	309.9	37.5	0.1	0.0	2.9	0.0	0.0	-18.6
11/3/2010	36.6	1.2	0.0	292.0	2.9	0.1	313.0	36.6	0.1	0.0	2.9	0.0	0.0	-19.8
11/4/2010	36.7	0.3	0.0	309.3	2.9	0.1	325.0	36.7	0.1	0.0	2.9	0.0	0.0	-15.4
11/5/2010	38.5	1.5	0.0	316.4	2.9	0.1	335.6	38.5	0.1	0.0	2.9	0.0	0.0	-17.7
11/6/2010	40.5	0.3	0.0	317.9	2.9	0.1	340.0	40.5	0.1	0.0	2.9	0.0	0.0	-21.9
11/7/2010	41.7	1.0	0.0	320.0	2.9	0.1	344.0	41.7	0.1	0.0	2.9	0.0	0.0	-23.1
11/8/2010	40.1	0.9	0.0	333.2	2.9	0.1	353.7	40.1	0.1	0.0	2.9	0.0	0.0	-19.7
11/9/2010	39.8	0.5	0.0	351.1	2.9	0.1	369.1	39.8	0.1	0.0	2.9	0.0	0.0	-17.5
11/10/2010	42.3	0.1	0.0	360.5	2.9	0.1	380.1	42.3	0.1	0.0	2.9	0.0	0.0	-19.6
11/11/2010	48.2	0.8	0.0	367.9	2.9	0.1	392.9	48.2	0.1	0.0	2.9	0.0	0.0	-24.3
11/12/2010	49.1	0.5	0.0	374.1	2.9	0.1	402.4	49.1	0.1	0.0	2.9	0.0	0.0	-27.8
11/13/2010	53.5	0.7	0.0	379.7	2.9	0.1	408.9	53.5	0.1	0.0	2.9	0.0	0.0	-28.6
11/14/2010	62.6	3.2	0.0	387.0	2.9	0.1	422.5	58.0	0.1	0.0	2.9	0.0	0.0	-27.7
11/15/2010	74.4	0.6	0.0	392.0	2.9	0.1	436.4	59.1	0.1	0.0	2.9	0.0	0.0	-28.5
11/16/2010	91.0	1.0	0.0	386.2	2.9	0.1	447.6	60.5	0.1	0.0	2.9	0.0	0.0	-29.9
11/17/2010	100.7	0.1	0.0	382.2	2.9	0.1	457.9	61.5	0.1	0.0	2.9	0.0	0.0	-36.4
11/18/2010	100.4	0.1	0.0	376.8	2.9	0.1	455.9	61.5	0.1	0.0	2.9	0.0	0.0	-40.2
11/19/2010	103.1	0.5	0.0	379.5	2.9	0.1	456.7	61.8	0.1	0.0	2.9	0.0	0.0	-35.4
11/20/2010	111.5	0.0	0.0	386.7	2.9	0.1	468.0	62.8	0.1	0.0	2.9	0.0	0.0	-32.5
11/21/2010	122.3	0.1	0.0	383.9	2.9	0.1	476.8	63.7	0.1	0.0	2.9	0.0	0.0	-34.2
11/22/2010	128.9	0.2	0.0	383.4	2.9	0.1	485.0	64.5	0.1	0.0	2.9	0.0	0.0	-37.1
11/23/2010	130.2	0.2	0.0	385.8	2.9	0.1	489.1	64.8	0.1	0.0	2.9	0.0	0.0	-37.6
11/24/2010	134.0	0.6	0.0	389.3	2.9	0.1	495.9	65.3	0.1	0.0	2.9	0.0	0.0	-37.3
11/25/2010	133.2	0.0	0.0	385.3	2.9	0.1	494.4	65.3	0.1	0.0	2.9	0.0	0.0	-41.2
11/26/2010	133.4	0.4	0.0	386.2	2.9	0.1	493.8	65.5	0.1	0.0	2.9	0.0	0.0	-39.3
11/27/2010	135.3	1.4	0.0	386.3	2.9	0.1	495.0	65.7	0.1	0.0	2.9	0.0	0.0	-37.7
11/28/2010	134.6	0.9	0.0	386.9	2.9	0.1	497.6	65.8	0.1	0.0	2.9	0.0	0.0	-41.0
11/29/2010	128.6	0.7	0.0	386.6	2.9	0.1	492.9	65.5	0.1	0.0	2.9	0.0	0.0	-42.5
11/30/2010	127.5	0.3	0.0	380.6	2.9	0.1	485.3	65.4	0.1	0.0	2.9	0.0	0.0	-42.3
12/1/2010	120.9	0.9	0.0	381.3	2.9	0.1	483.4	65.2	0.1	0.0	2.9	0.0	0.0	-45.5
12/2/2010	107.0	0.1	0.0	359.3	2.9	0.1	454.3	63.5	0.1	0.0	2.9	0.0	0.0	-51.5
12/3/2010	106.0	1.3	0.0	349.4	2.9	0.1	434.9	63.1	0.1	0.0	2.9	0.0	0.0	-41.2
12/4/2010	111.9	0.6	0.0	367.1	2.9	0.1	447.8	63.9	0.1	0.0	2.9	0.0	0.0	-32.2
12/5/2010	120.7	1.5	0.0	366.4	2.9	0.1	459.3	64.9	0.1	0.0	2.9	0.0	0.0	-35.6
12/6/2010	106.3	0.6	0.0	365.3	2.9	0.1	464.0	64.7	0.1	0.0	2.9	0.0	0.0	-56.5
12/7/2010	51.0	0.6	73.5	136.3	2.9	0.1	263.7	55.0	0.1	0.0	2.9	0.0	0.0	-57.3
12/8/2010	26.1	1.2	51.2	9.9	2.9	0.1	90.2	47.3	0.1	0.0	2.9	0.0	0.0	-49.1
12/9/2010	26.2	1.1	0.0	10.0	2.9	0.1	30.8	26.2	0.1	0.0	2.9	0.0	0.0	-19.8
12/10/2010	26.8	1.0	0.0	9.9	2.9	0.1	30.6	26.8	0.1	0.0	2.9	0.0	0.0	-19.8
12/11/2010	27.7	1.1	0.0	9.8	2.9	0.1	31.5	27.7	0.1	0.0	2.9	0.0	0.0	-20.5
12/12/2010	26.5	0.4	0.0	9.6	2.9	0.1	31.6	26.5	0.1	0.0	2.9	0.0	0.0	-21.6
12/13/2010	27.3	1.0	0.0	9.8	2.9	0.1	30.7	27.3	0.1	0.0	2.9	0.0	0.0	-20.0
12/14/2010	29.3	1.2	0.0	10.3	2.9	0.1	32.4	29.3	0.1	0.0	2.9	0.0	0.0	-21.0
12/15/2010	30.6	2.0	0.0	13.7	2.9	0.1	35.4	30.6	0.1	0.0	2.9	0.0	0.0	-19.6
12/16/2010	35.6	0.3	0.0	15.8	2.9	0.1	40.7	35.6	0.1	0.0	2.9	0.0	0.0	-24.6
12/17/2010	36.4	1.0	0.0	13.9	2.9	0.1	44.1	36.4	0.1	0.0	2.9	0.0	0.0	-29.2
12/18/2010	34.9	1.4	0.0	13.5	2.9	0.1	43.0	34.9	0.1	0.0	2.9	0.0	0.0	-28.0



Table F1-3: RGCP Channel Water Budget Equation Analysis Segment 3

2010-12 Study Period

(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	MODFLOW Floodplain Recharge	Open Water Channel Evaporation	MODFLOW Riparian Evapo-transpiration	Diversions Authorized (None)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
12/19/2010	38.7	0.7	0.0	17.5	2.9	0.1	44.4	38.7	0.1	0.0	2.9	0.0	0.0	-26.3
12/20/2010	51.1	1.2	0.0	17.4	2.9	0.1	50.8	49.1	0.1	0.0	2.9	0.0	0.0	-30.2
12/21/2010	64.2	0.1	0.0	16.4	2.9	0.1	62.6	50.8	0.1	0.0	2.9	0.0	0.0	-32.6
12/22/2010	69.8	1.4	0.0	16.3	2.9	0.1	72.9	51.7	0.1	0.0	2.9	0.0	0.0	-37.0
12/23/2010	77.7	0.6	0.0	17.2	2.9	0.1	77.9	52.4	0.1	0.0	2.9	0.0	0.0	-34.7
12/24/2010	79.9	0.8	0.0	17.4	2.9	0.1	85.1	53.0	0.1	0.0	2.9	0.0	0.0	-40.0
12/25/2010	82.9	0.8	0.0	18.0	2.9	0.1	86.8	53.2	0.1	0.0	2.9	0.0	0.0	-38.3
12/26/2010	88.7	1.8	0.0	19.0	2.9	0.1	91.5	53.9	0.1	0.0	2.9	0.0	0.0	-36.0
12/27/2010	93.5	1.3	0.0	20.1	2.9	0.1	97.5	54.5	0.1	0.0	2.9	0.0	0.0	-37.2
12/28/2010	98.4	0.6	0.0	20.9	2.9	0.1	103.2	55.1	0.1	0.0	2.9	0.0	0.0	-38.4
12/29/2010	100.7	1.6	0.0	20.0	2.9	0.1	106.7	55.4	0.1	0.0	2.9	0.0	0.0	-39.8
12/30/2010	102.4	1.3	0.0	21.4	2.9	0.1	109.1	55.6	0.1	0.0	2.9	0.0	0.0	-39.6
12/31/2010	104.5	0.2	0.0	22.9	2.9	0.1	111.7	56.0	0.1	0.0	2.9	0.0	0.0	-40.2
1/1/2011	107.2	0.9	0.0	24.0	2.9	0.1	115.5	56.4	0.1	0.0	2.9	0.0	0.0	-39.8
1/2/2011	109.6	0.8	0.0	25.1	2.9	0.1	118.5	56.7	0.1	0.0	2.9	0.0	0.0	-39.8
1/3/2011	113.8	0.3	0.0	25.8	2.9	0.1	122.2	57.1	0.1	0.0	2.9	0.0	0.0	-39.5
1/4/2011	116.8	0.8	0.0	26.2	2.9	0.1	126.8	57.6	0.1	0.0	2.9	0.0	0.0	-40.6
1/5/2011	116.7	0.3	0.0	26.0	2.9	0.1	128.3	57.7	0.1	0.0	2.9	0.0	0.0	-43.0
1/6/2011	116.0	1.0	0.0	26.3	2.9	0.1	128.0	57.7	0.1	0.0	2.9	0.0	0.0	-42.6
1/7/2011	115.0	1.2	0.0	29.1	2.9	0.1	128.9	57.7	0.1	0.0	2.9	0.0	0.0	-41.4
1/8/2011	116.1	0.8	0.0	29.6	2.9	0.1	130.1	57.9	0.1	0.0	2.9	0.0	0.0	-41.5
1/9/2011	119.3	0.7	0.0	27.8	2.9	0.1	130.5	58.1	0.1	0.0	2.9	0.0	0.0	-40.8
1/10/2011	124.6	0.6	0.0	26.3	2.9	0.1	132.5	58.6	0.1	0.0	2.9	0.0	0.0	-39.6
1/11/2011	126.9	1.3	0.0	26.0	2.9	0.1	136.6	58.9	0.1	0.0	2.9	0.0	0.0	-41.3
1/12/2011	128.1	0.4	0.0	27.2	2.9	0.1	138.5	59.2	0.1	0.0	2.9	0.0	0.0	-42.0
1/13/2011	128.8	1.4	0.0	29.4	2.9	0.1	141.0	59.4	0.1	0.0	2.9	0.0	0.0	-40.8
1/14/2011	130.2	0.2	0.0	30.1	2.9	0.1	143.3	59.6	0.1	0.0	2.9	0.0	0.0	-42.4
1/15/2011	130.3	0.7	0.0	30.5	2.9	0.1	144.6	59.7	0.1	0.0	2.9	0.0	0.0	-43.0
1/16/2011	129.6	0.1	0.0	29.8	2.9	0.1	143.9	59.7	0.1	0.0	2.9	0.0	0.0	-44.0
1/17/2011	95.1	0.3	25.3	0.0	2.9	0.1	123.3	57.6	0.1	0.0	2.9	0.0	0.0	-60.3
1/18/2011	43.4	1.0	0.0	28.6	2.9	0.1	74.1	43.4	0.1	0.0	2.9	0.0	0.0	-44.4
1/19/2011	72.8	0.7	0.0	27.2	2.9	0.1	78.6	54.7	0.1	0.0	2.9	0.0	0.0	-32.6
1/20/2011	45.0	0.9	6.8	25.7	2.9	0.1	80.3	45.0	0.1	0.0	2.9	0.0	0.0	-47.0
1/21/2011	37.4	0.6	0.0	27.5	2.9	0.1	61.6	37.4	0.1	0.0	2.9	0.0	0.0	-33.4
1/22/2011	25.5	0.8	0.0	29.8	2.9	0.1	56.3	25.5	0.1	0.0	2.9	0.0	0.0	-25.7
1/23/2011	30.5	0.1	0.0	34.5	2.9	0.1	50.9	30.5	0.1	0.0	2.9	0.0	0.0	-16.4
1/24/2011	36.7	0.8	0.0	37.0	2.9	0.1	59.6	36.7	0.1	0.0	2.9	0.0	0.0	-21.8
1/25/2011	44.1	0.7	0.0	38.9	2.9	0.1	68.1	44.1	0.1	0.0	2.9	0.0	0.0	-28.5
1/26/2011	42.8	0.3	0.0	43.7	2.9	0.1	77.1	42.8	0.1	0.0	2.9	0.0	0.0	-33.1
1/27/2011	32.0	0.6	1.1	33.8	2.9	0.1	69.8	32.0	0.1	0.0	2.9	0.0	0.0	-34.3
1/28/2011	20.9	0.4	0.0	36.7	2.9	0.1	56.6	20.9	0.1	0.0	2.9	0.0	0.0	-19.6
1/29/2011	20.9	0.2	0.0	37.1	2.9	0.1	50.7	20.9	0.1	0.0	2.9	0.0	0.0	-13.4
1/30/2011	38.5	0.4	0.0	41.0	2.9	0.1	54.0	38.5	0.1	0.0	2.9	0.0	0.0	-12.6
1/31/2011	39.5	0.7	0.0	44.3	2.9	0.1	75.1	39.5	0.1	0.0	2.9	0.0	0.0	-30.2
2/1/2011	41.5	0.4	0.0	45.2	2.9	0.1	75.1	41.5	0.1	0.0	2.9	0.0	0.0	-29.6
2/2/2011	43.1	0.2	0.0	29.4	2.9	0.1	68.6	43.1	0.1	0.0	2.9	0.0	0.0	-39.1
2/3/2011	42.8	0.6	0.0	30.4	2.9	0.1	64.2	42.8	0.1	0.0	2.9	0.0	0.0	-33.2
2/4/2011	42.1	0.7	0.0	32.1	2.9	0.1	64.8	42.1	0.1	0.0	2.9	0.0	0.0	-32.1
2/5/2011	43.3	1.0	0.0	39.3	2.9	0.1	69.7	43.3	0.1	0.0	2.9	0.0	0.0	-29.4
2/6/2011	44.2	0.6	0.0	47.8	2.9	0.1	78.4	44.2	0.1	0.0	2.9	0.0	0.0	-30.0
2/7/2011	45.1	0.7	0.0	43.7	2.9	0.1	80.2	45.1	0.1	0.0	2.9	0.0	0.0	-35.8



Table F1-3: RGCP Channel Water Budget Equation Analysis Segment 3

2010-12 Study Period

(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	MODFLOW Floodplain Recharge	Open Water Channel Evaporation	MODFLOW Riparian Evapo-transpiration	Diversions Authorized (None)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
2/8/2011	47.4	0.6	0.0	43.2	2.9	0.1	79.0	47.4	0.1	0.0	2.9	0.0	0.0	-35.3
2/9/2011	50.9	0.9	0.0	40.5	2.9	0.1	80.1	50.9	0.1	0.0	2.9	0.0	0.0	-38.7
2/10/2011	49.3	0.2	0.0	37.9	2.9	0.1	80.4	49.3	0.1	0.0	2.9	0.0	0.0	-42.3
2/11/2011	47.7	0.3	0.0	37.3	2.9	0.1	76.8	47.7	0.1	0.0	2.9	0.0	0.0	-39.2
2/12/2011	32.9	2.0	0.0	36.7	2.9	0.1	72.2	32.9	0.1	0.0	2.9	0.0	0.0	-33.5
2/13/2011	38.4	0.5	0.0	37.9	2.9	0.1	61.5	38.4	0.1	0.0	2.9	0.0	0.0	-23.2
2/14/2011	32.0	1.0	0.0	41.1	2.9	0.1	69.5	32.0	0.1	0.0	2.9	0.0	0.0	-27.5
2/15/2011	29.0	0.4	0.0	41.9	2.9	0.1	63.6	29.0	0.1	0.0	2.9	0.0	0.0	-21.4
2/16/2011	29.9	0.6	0.0	41.4	2.9	0.1	62.5	29.9	0.1	0.0	2.9	0.0	0.0	-20.5
2/17/2011	30.7	0.8	0.0	41.6	2.9	0.1	63.4	30.7	0.1	0.0	2.9	0.0	0.0	-21.0
2/18/2011	28.2	0.2	0.0	42.1	2.9	0.1	64.2	28.2	0.1	0.0	2.9	0.0	0.0	-21.9
2/19/2011	23.4	0.4	0.0	42.9	2.9	0.1	60.7	23.4	0.1	0.0	2.9	0.0	0.0	-17.4
2/20/2011	23.6	0.5	0.0	42.1	2.9	0.1	58.1	23.6	0.1	0.0	2.9	0.0	0.0	-15.5
2/21/2011	23.9	1.4	0.0	46.6	2.9	0.1	60.6	23.9	0.1	0.0	2.9	0.0	0.0	-12.6
2/22/2011	22.3	0.6	0.0	47.5	2.9	0.1	62.8	22.3	0.1	0.0	2.9	0.0	0.0	-14.7
2/23/2011	19.9	0.1	0.0	71.3	2.9	0.1	75.3	19.9	0.1	0.0	2.9	0.0	0.0	-3.9
2/24/2011	19.3	1.7	0.0	76.5	2.9	0.1	85.2	19.3	0.1	0.0	2.9	0.0	0.0	-7.0
2/25/2011	20.3	0.3	0.0	73.6	2.9	0.1	85.4	20.3	0.1	0.0	2.9	0.0	0.0	-11.5
2/26/2011	20.5	0.3	0.0	69.5	2.9	0.1	82.7	20.5	0.1	0.0	2.9	0.0	0.0	-12.9
2/27/2011	20.5	0.0	0.0	71.7	2.9	0.1	82.7	20.5	0.1	0.0	2.9	0.0	0.0	-11.0
2/28/2011	21.1	0.1	0.0	67.8	2.9	0.1	81.2	21.1	0.1	0.0	2.9	0.0	0.0	-13.3
3/1/2011	21.9	1.0	0.0	66.3	2.9	0.0	79.5	21.9	11.8	2.7	8.4	0.0	0.0	-32.1
3/2/2011	21.9	0.7	0.0	64.9	2.9	0.0	78.7	21.9	11.8	2.7	8.4	0.0	0.0	-32.9
3/3/2011	22.2	0.8	0.0	60.9	2.9	0.0	75.6	22.2	11.8	2.7	8.4	0.0	0.0	-33.9
3/4/2011	23.2	0.5	0.0	56.8	2.9	0.0	72.3	23.2	11.8	2.7	8.4	0.0	0.0	-34.9
3/5/2011	24.1	0.1	0.0	54.3	2.9	0.0	70.5	24.1	11.8	2.7	8.4	0.0	0.0	-36.0
3/6/2011	23.1	0.1	0.0	51.3	2.9	0.0	68.0	23.1	11.8	2.7	8.4	0.0	0.0	-36.5
3/7/2011	21.3	0.4	0.0	69.7	2.9	0.0	76.2	21.3	11.8	2.7	8.4	0.0	0.0	-26.1
3/8/2011	20.5	0.3	0.0	73.4	2.9	0.0	84.1	20.5	11.8	2.7	8.4	0.0	0.0	-30.3
3/9/2011	19.4	0.1	0.0	65.4	2.9	0.0	80.1	19.4	11.8	2.7	8.4	0.0	0.0	-34.5
3/10/2011	17.9	0.6	0.0	61.7	2.9	0.0	73.8	17.9	11.8	2.7	8.4	0.0	0.0	-31.4
3/11/2011	431.6	0.7	0.0	54.1	2.9	0.0	443.6	50.7	11.8	2.7	8.4	0.0	0.0	-27.8
3/12/2011	431.3	0.7	0.0	44.4	2.9	0.0	434.4	50.3	11.8	2.7	8.4	0.0	0.0	-28.2
3/13/2011	432.0	0.3	0.0	33.3	2.9	0.0	424.3	49.8	11.8	2.7	8.4	0.0	0.0	-28.5
3/14/2011	648.1	0.3	0.0	26.6	2.9	0.0	429.0	63.3	11.8	2.7	8.4	0.0	0.0	162.8
3/15/2011	694.7	0.6	0.0	14.7	2.9	0.0	645.0	72.3	11.8	2.7	8.4	0.0	0.0	-27.3
3/16/2011	702.0	0.0	0.0	18.0	2.9	0.0	647.3	72.5	11.8	2.7	8.4	0.0	0.0	-19.8
3/17/2011	1129.5	0.0	0.0	29.2	2.9	0.0	809.9	94.3	11.8	2.7	8.4	0.0	0.0	234.6
3/18/2011	1492.6	0.6	0.0	43.6	2.9	0.0	1371.3	119.2	11.8	2.7	8.4	0.0	0.0	26.3
3/19/2011	1816.4	0.2	0.0	68.7	2.9	0.0	1577.3	132.8	11.8	2.7	8.4	0.0	0.0	155.3
3/20/2011	2153.6	0.5	0.0	115.0	2.9	0.0	2058.3	150.8	11.8	2.7	8.4	0.0	0.0	40.1
3/21/2011	2218.0	0.0	0.0	120.2	2.9	0.0	2203.0	154.9	11.8	2.7	8.4	0.0	0.0	-39.6
3/22/2011	2313.2	0.2	0.0	120.0	2.9	0.0	2244.6	158.1	11.8	2.7	8.4	0.0	0.0	10.8
3/23/2011	2502.2	0.0	0.0	123.0	2.9	0.0	2414.0	165.8	11.8	2.7	8.4	0.0	0.0	25.6
3/24/2011	2594.2	0.1	0.0	118.6	2.9	0.0	2548.0	170.3	11.8	2.7	8.4	0.0	0.0	-25.4
3/25/2011	2609.3	0.0	0.0	126.0	2.9	0.0	2580.7	171.3	11.8	2.7	8.4	0.0	0.0	-36.6
3/26/2011	2630.1	0.0	0.0	131.2	2.9	0.0	2599.2	172.0	11.8	2.7	8.4	0.0	0.0	-29.8
3/27/2011	1423.2	1.0	372.5	164.1	2.9	0.0	1962.7	128.3	11.8	2.7	8.4	0.0	0.0	-150.2
3/28/2011	654.4	0.4	162.7	169.1	2.9	0.0	989.1	79.0	11.8	2.7	8.4	0.0	0.0	-101.3
3/29/2011	445.7	0.2	37.9	166.2	2.9	0.0	652.7	58.6	11.8	2.7	8.4	0.0	0.0	-81.2
3/30/2011	430.1	0.0	0.0	136.5	2.9	0.0	529.1	54.0	11.8	2.7	8.4	0.0	0.0	-36.4

Table F1-3: RGCP Channel Water Budget Equation Analysis Segment 3

2010-12 Study Period

(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	MODFLOW Floodplain Recharge	Open Water Channel Evaporation	MODFLOW Riparian Evapo- transpiration	Diversions Authorized (None)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
3/31/2011	430.2	0.1	0.0	148.2	2.9	0.0	526.0	54.1	11.8	2.7	8.4	0.0	0.0	-21.6
4/1/2011	2095.6	0.1	105.0	147.7	2.9	0.0	2351.2	154.4	11.8	5.9	8.4	0.0	0.0	-180.3
4/2/2011	1594.6	0.5	72.9	98.2	2.9	0.0	1768.5	130.0	11.8	5.9	8.4	0.0	0.0	-155.5
4/3/2011	1290.8	0.4	0.0	81.7	2.9	0.0	1351.1	112.1	11.8	5.9	8.4	0.0	0.0	-113.4
4/4/2011	1278.6	0.5	0.0	85.8	2.9	0.0	1232.9	109.2	11.8	5.9	8.4	0.0	0.0	-0.4
4/5/2011	1420.5	0.7	0.0	88.8	2.9	0.0	1324.8	115.6	11.8	5.9	8.4	0.0	0.0	46.6
4/6/2011	1608.3	0.8	0.0	106.0	2.9	0.0	1522.6	125.5	11.8	5.9	8.4	0.0	0.0	43.9
4/7/2011	1657.2	0.1	0.0	107.3	2.9	0.0	1647.8	129.4	11.8	5.9	8.4	0.0	0.0	-35.7
4/8/2011	1557.4	0.0	0.0	104.9	2.9	0.0	1624.4	126.0	11.8	5.9	8.4	0.0	0.0	-111.2
4/9/2011	1378.9	0.0	0.0	89.1	2.9	0.0	1423.9	116.4	11.8	5.9	8.4	0.0	0.0	-95.5
4/10/2011	1449.1	0.0	0.0	93.7	2.9	0.0	1410.8	118.4	11.8	5.9	8.4	0.0	0.0	-9.6
4/11/2011	1453.8	0.6	0.0	101.0	2.9	0.0	1432.4	118.9	11.8	5.9	8.4	0.0	0.0	-19.0
4/12/2011	1409.6	0.7	0.0	100.6	2.9	0.0	1407.0	117.0	11.8	5.9	8.4	0.0	0.0	-36.2
4/13/2011	1363.7	0.1	0.0	101.9	2.9	0.0	1399.5	115.5	11.8	5.9	8.4	0.0	0.0	-72.4
4/14/2011	1262.5	0.1	0.0	96.4	2.9	0.0	1296.1	109.9	11.8	5.9	8.4	0.0	0.0	-70.1
4/15/2011	1208.5	0.9	0.0	94.9	2.9	0.0	1214.3	106.3	11.8	5.9	8.4	0.0	0.0	-39.5
4/16/2011	1214.0	0.2	0.0	93.4	2.9	0.0	1210.8	106.6	11.8	5.9	8.4	0.0	0.0	-32.9
4/17/2011	1293.9	0.1	0.0	94.4	2.9	0.0	1220.5	109.1	11.8	5.9	8.4	0.0	0.0	35.7
4/18/2011	1344.1	0.1	0.0	101.3	2.9	0.0	1309.8	112.9	11.8	5.9	8.4	0.0	0.0	-0.3
4/19/2011	1456.2	0.1	0.0	102.3	2.9	0.0	1445.5	119.3	11.8	5.9	8.4	0.0	0.0	-29.3
4/20/2011	1522.7	0.0	0.0	106.5	2.9	0.0	1494.5	122.3	11.8	5.9	8.4	0.0	0.0	-10.7
4/21/2011	1505.5	0.0	0.0	110.1	2.9	0.0	1534.2	122.6	11.8	5.9	8.4	0.0	0.0	-64.3
4/22/2011	1361.6	0.6	0.0	100.3	2.9	0.0	1433.3	116.1	11.8	5.9	8.4	0.0	0.0	-109.9
4/23/2011	1151.2	0.5	0.0	83.5	2.9	0.0	1231.4	105.0	11.8	5.9	8.4	0.0	0.0	-124.2
4/24/2011	1033.8	0.4	0.0	77.4	2.9	0.0	1036.9	96.1	11.8	5.9	8.4	0.0	0.0	-44.6
4/25/2011	1084.9	0.3	0.0	81.9	2.9	0.0	1031.1	97.9	11.8	5.9	8.4	0.0	0.0	15.0
4/26/2011	1173.7	0.2	0.0	84.7	2.9	0.0	1155.1	104.1	11.8	5.9	8.4	0.0	0.0	-23.7
4/27/2011	1317.1	0.5	0.0	82.9	2.9	0.0	1195.7	109.5	11.8	5.9	8.4	0.0	0.0	72.2
4/28/2011	1196.8	0.0	38.9	91.1	2.9	0.0	1329.7	108.8	11.8	5.9	8.4	0.0	0.0	-134.8
4/29/2011	988.4	0.1	0.0	85.2	2.9	0.0	1044.0	94.8	11.8	5.9	8.4	0.0	0.0	-88.2
4/30/2011	877.7	0.3	0.0	67.3	2.9	0.0	945.3	88.6	11.8	5.9	8.4	0.0	0.0	-111.8
5/1/2011	966.1	0.0	0.0	58.6	2.9	0.0	889.3	90.0	11.8	9.3	8.4	0.0	0.0	18.9
5/2/2011	831.0	1.1	0.0	54.6	2.9	0.0	880.3	84.7	11.8	9.3	8.4	0.0	0.0	-104.8
5/3/2011	763.4	0.9	0.0	53.4	2.9	0.0	778.9	79.1	11.8	9.3	8.4	0.0	0.0	-67.0
5/4/2011	729.5	0.2	0.0	54.0	2.9	0.0	732.9	76.5	11.8	9.3	8.4	0.0	0.0	-52.2
5/5/2011	675.0	0.3	0.0	56.2	2.9	0.0	694.7	72.8	11.8	9.3	8.4	0.0	0.0	-62.4
5/6/2011	645.8	0.3	0.0	46.6	2.9	0.0	645.4	69.9	11.8	9.3	8.4	0.0	0.0	-49.2
5/7/2011	654.0	0.7	0.0	38.2	2.9	0.0	620.6	69.4	11.8	9.3	8.4	0.0	0.0	-23.6
5/8/2011	667.2	0.0	0.0	30.7	2.9	0.0	631.5	70.5	11.8	9.3	8.4	0.0	0.0	-30.6
5/9/2011	858.0	0.0	0.0	24.4	2.9	0.0	674.1	79.9	11.8	9.3	8.4	0.0	0.0	101.8
5/10/2011	1184.8	0.0	0.0	21.1	2.9	0.0	1060.6	103.2	11.8	9.3	8.4	0.0	0.0	15.6
5/11/2011	1239.8	0.4	0.0	19.5	2.9	0.0	1114.8	105.3	11.8	9.3	8.4	0.0	0.0	13.1
5/12/2011	1380.1	0.0	0.0	29.8	2.9	0.0	1265.5	113.4	11.8	9.3	8.4	0.0	0.0	4.5
5/13/2011	1371.7	0.1	0.0	36.8	2.9	0.0	1349.9	114.9	11.8	9.3	8.4	0.0	0.0	-82.6
5/14/2011	1247.8	0.6	0.0	28.4	2.9	0.0	1222.7	108.1	11.8	9.3	8.4	0.0	0.0	-80.5
5/15/2011	1180.9	0.7	0.0	22.3	2.9	0.0	1122.2	103.6	11.8	9.3	8.4	0.0	0.0	-48.4
5/16/2011	1179.8	1.1	0.0	21.3	2.9	0.0	1109.5	103.4	11.8	9.3	8.4	0.0	0.0	-37.1
5/17/2011	1218.0	0.3	0.0	18.9	2.9	0.0	1108.9	104.5	11.8	9.3	8.4	0.0	0.0	-2.8
5/18/2011	1369.0	0.3	0.0	21.0	2.9	0.0	1213.6	111.8	11.8	9.3	8.4	0.0	0.0	38.4
5/19/2011	1532.2	0.0	0.0	30.3	2.9	0.0	1410.7	121.1	11.8	9.3	8.4	0.0	0.0	4.1
5/20/2011	1510.2	0.3	0.0	34.6	2.9	0.0	1484.6	122.0	11.8	9.3	8.4	0.0	0.0	-88.0

Table F1-3: RGCP Channel Water Budget Equation Analysis Segment 3

2010-12 Study Period

(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	MODFLOW Floodplain Recharge	Open Water Channel Evaporation	MODFLOW Riparian Evapo-transpiration	Diversions Authorized (None)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
5/21/2011	1389.6	1.0	0.0	24.4	2.9	0.0	1351.5	115.5	11.8	9.3	8.4	0.0	0.0	-78.4
5/22/2011	1251.3	0.1	0.0	26.6	2.9	0.0	1251.2	109.0	11.8	9.3	8.4	0.0	0.0	-108.6
5/23/2011	1081.8	0.8	0.0	34.1	2.9	0.0	1081.3	99.3	11.8	9.3	8.4	0.0	0.0	-90.3
5/24/2011	994.4	0.2	0.0	29.7	2.9	0.0	966.8	93.2	11.8	9.3	8.4	0.0	0.0	-62.2
5/25/2011	982.0	1.0	0.0	29.6	2.9	0.0	939.4	92.4	11.8	9.3	8.4	0.0	0.0	-45.7
5/26/2011	935.2	0.1	0.0	27.6	2.9	0.0	905.7	89.7	11.8	9.3	8.4	0.0	0.0	-58.9
5/27/2011	889.6	0.6	0.0	23.8	2.9	0.0	855.7	86.5	11.8	9.3	8.4	0.0	0.0	-54.7
5/28/2011	900.8	0.6	0.0	22.2	2.9	0.0	834.0	86.3	11.8	9.3	8.4	0.0	0.0	-23.2
5/29/2011	1032.9	0.3	0.0	28.4	2.9	0.0	901.2	92.9	11.8	9.3	8.4	0.0	0.0	41.0
5/30/2011	1246.1	0.0	0.0	33.8	2.9	0.0	1101.7	105.4	11.8	9.3	8.4	0.0	0.0	46.1
5/31/2011	1422.7	0.7	0.0	33.2	2.9	0.0	1293.0	115.2	11.8	9.3	8.4	0.0	0.0	21.8
6/1/2011	1671.5	0.4	0.0	51.2	2.9	0.0	1382.4	124.4	11.8	9.5	8.4	0.0	0.0	189.5
6/2/2011	1512.1	0.3	27.0	75.3	2.9	0.0	1617.2	124.7	11.8	9.5	8.4	0.0	0.0	-154.1
6/3/2011	1380.8	0.6	0.0	65.1	2.9	0.0	1407.1	116.3	11.8	9.5	8.4	0.0	0.0	-103.6
6/4/2011	1319.2	0.3	0.0	52.7	2.9	0.0	1285.0	111.7	11.8	9.5	8.4	0.0	0.0	-51.3
6/5/2011	1258.9	0.2	0.0	56.1	2.9	0.0	1230.2	108.6	11.8	9.5	8.4	0.0	0.0	-50.4
6/6/2011	1299.4	0.7	0.0	49.7	2.9	0.0	1243.2	110.2	11.8	9.5	8.4	0.0	0.0	-30.3
6/7/2011	1248.3	1.6	0.0	58.7	2.9	0.0	1239.9	108.5	11.8	9.5	8.4	0.0	0.0	-66.5
6/8/2011	1291.9	0.7	0.0	62.4	2.9	0.0	1216.7	109.3	11.8	9.5	8.4	0.0	0.0	2.2
6/9/2011	1403.5	0.2	0.0	78.6	2.9	0.0	1326.3	115.3	11.8	9.5	8.4	0.0	0.0	14.0
6/10/2011	1365.6	2.2	0.0	72.0	2.9	0.0	1376.9	115.1	11.8	9.5	8.4	0.0	0.0	-79.0
6/11/2011	1293.1	0.4	0.0	53.1	2.9	0.0	1270.1	110.5	11.8	9.5	8.4	0.0	0.0	-60.7
6/12/2011	1339.2	0.6	0.0	59.8	2.9	0.0	1261.7	111.8	11.8	9.5	8.4	0.0	0.0	-0.6
6/13/2011	1374.9	0.1	0.0	65.0	2.9	0.0	1332.2	114.5	11.8	9.5	8.4	0.0	0.0	-33.5
6/14/2011	1459.0	1.2	0.0	65.1	2.9	0.0	1380.9	118.1	11.8	9.5	8.4	0.0	0.0	-0.5
6/15/2011	1419.9	2.0	0.0	73.9	2.9	0.0	1411.7	117.6	11.8	9.5	8.4	0.0	0.0	-60.1
6/16/2011	1381.6	1.2	0.0	72.7	2.9	0.0	1364.3	115.3	11.8	9.5	8.4	0.0	0.0	-50.9
6/17/2011	1377.1	1.6	0.0	70.9	2.9	0.0	1358.5	115.1	11.8	9.5	8.4	0.0	0.0	-50.7
6/18/2011	1211.4	2.9	0.0	62.0	2.9	0.0	1257.7	107.6	11.8	9.5	8.4	0.0	0.0	-115.8
6/19/2011	1185.1	0.9	0.0	54.5	2.9	0.0	1132.8	103.9	11.8	9.5	8.4	0.0	0.0	-23.1
6/20/2011	1209.5	1.0	0.0	59.5	2.9	0.0	1154.8	105.3	11.8	9.5	8.4	0.0	0.0	-16.9
6/21/2011	1385.3	0.4	0.0	63.5	2.9	0.0	1240.4	112.8	11.8	9.5	8.4	0.0	0.0	69.2
6/22/2011	1444.6	0.3	0.0	90.4	2.9	0.0	1422.4	118.5	11.8	9.5	8.4	0.0	0.0	-32.4
6/23/2011	1440.1	1.0	0.0	80.1	2.9	0.0	1428.9	118.5	11.8	9.5	8.4	0.0	0.0	-53.0
6/24/2011	1410.5	1.1	0.0	78.2	2.9	0.0	1406.1	117.1	11.8	9.5	8.4	0.0	0.0	-60.1
6/25/2011	1335.9	0.6	0.0	63.2	2.9	0.0	1325.6	113.1	11.8	9.5	8.4	0.0	0.0	-65.7
6/26/2011	1435.7	0.6	0.0	76.8	2.9	0.0	1352.0	116.7	11.8	9.5	8.4	0.0	0.0	17.6
6/27/2011	1534.4	2.4	0.0	85.6	2.9	0.0	1473.0	122.3	11.8	9.5	8.4	0.0	0.0	0.4
6/28/2011	1593.7	1.7	0.0	85.8	2.9	0.0	1556.6	125.8	11.8	9.5	8.4	0.0	0.0	-28.0
6/29/2011	1548.6	3.0	0.0	81.1	2.9	0.0	1530.7	123.9	11.8	9.5	8.4	0.0	0.0	-48.6
6/30/2011	1613.9	1.8	0.0	86.1	2.9	0.0	1553.0	126.2	11.8	9.5	8.4	0.0	0.0	-4.2
7/1/2011	1594.2	1.0	0.0	88.3	2.9	0.0	1586.7	126.4	11.8	7.1	8.4	0.0	0.0	-54.0
7/2/2011	1558.7	3.1	0.0	89.2	2.9	0.0	1553.2	124.6	11.8	7.1	8.4	0.0	0.0	-51.2
7/3/2011	1523.6	0.8	0.0	85.2	2.9	0.0	1514.5	122.8	11.8	7.1	8.4	0.0	0.0	-52.0
7/4/2011	1503.6	1.3	0.0	85.2	2.9	0.0	1486.7	121.6	11.8	7.1	8.4	0.0	0.0	-42.5
7/5/2011	1381.5	3.2	0.0	80.1	2.9	0.0	1409.5	116.3	11.8	7.1	8.4	0.0	0.0	-85.2
7/6/2011	1318.2	0.8	0.0	68.3	2.9	0.0	1312.8	112.2	11.8	7.1	8.4	0.0	0.0	-62.1
7/7/2011	1399.7	1.2	0.0	71.5	2.9	0.0	1330.5	115.1	11.8	7.1	8.4	0.0	0.0	2.5
7/8/2011	1456.8	1.4	0.0	84.8	2.9	0.0	1435.2	119.1	11.8	7.1	8.4	0.0	0.0	-35.6
7/9/2011	1231.8	4.0	0.0	75.5	2.9	0.0	1263.8	108.3	11.8	7.1	8.4	0.0	0.0	-85.1
7/10/2011	1131.4	3.1	0.0	57.3	2.9	0.0	1143.1	102.3	11.8	7.1	8.4	0.0	0.0	-78.0

Table F1-3: RGCP Channel Water Budget Equation Analysis Segment 3

2010-12 Study Period

(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	MODFLOW Floodplain Recharge	Open Water Channel Evaporation	MODFLOW Riparian Evapo- transpiration	Diversions Authorized (None)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
7/11/2011	1117.9	1.9	0.0	53.0	2.9	0.0	1065.5	100.1	11.8	7.1	8.4	0.0	0.0	-17.1
7/12/2011	1187.5	1.1	0.0	59.5	2.9	0.0	1124.2	103.8	11.8	7.1	8.4	0.0	0.0	-4.2
7/13/2011	1202.9	1.3	0.0	65.3	2.9	0.0	1168.3	105.3	11.8	7.1	8.4	0.0	0.0	-28.3
7/14/2011	1220.6	1.0	0.0	67.5	2.9	0.0	1184.9	106.3	11.8	7.1	8.4	0.0	0.0	-26.4
7/15/2011	1152.7	2.2	0.0	61.7	2.9	0.0	1176.5	103.9	11.8	7.1	8.4	0.0	0.0	-88.1
7/16/2011	1080.3	1.3	0.0	45.3	2.9	0.0	1046.2	98.2	11.8	7.1	8.4	0.0	0.0	-41.8
7/17/2011	1163.3	4.2	0.0	49.8	2.9	0.0	1062.8	101.6	11.8	7.1	8.4	0.0	0.0	28.6
7/18/2011	1289.1	1.2	0.0	59.4	2.9	0.0	1220.4	109.4	11.8	7.1	8.4	0.0	0.0	-4.6
7/19/2011	1436.4	1.7	0.0	67.8	2.9	0.0	1315.1	116.0	11.8	7.1	8.4	0.0	0.0	50.5
7/20/2011	1595.8	1.6	0.0	86.7	2.9	0.0	1502.8	124.8	11.8	7.1	8.4	0.0	0.0	32.3
7/21/2011	1626.6	3.2	0.0	80.0	2.9	0.0	1614.3	127.9	11.8	7.1	8.4	0.0	0.0	-56.7
7/22/2011	1548.2	1.3	0.0	84.5	2.9	0.0	1565.8	124.6	11.8	7.1	8.4	0.0	0.0	-80.7
7/23/2011	1442.6	3.0	0.0	69.3	2.9	0.0	1444.1	118.9	11.8	7.1	8.4	0.0	0.0	-72.3
7/24/2011	1349.1	1.0	0.0	69.6	2.9	0.0	1331.7	113.6	11.8	7.1	8.4	0.0	0.0	-49.9
7/25/2011	1343.9	1.3	0.0	66.3	2.9	0.0	1318.7	113.2	11.8	7.1	8.4	0.0	0.0	-44.6
7/26/2011	1335.0	3.0	0.0	65.2	2.9	0.0	1303.3	112.6	11.8	7.1	8.4	0.0	0.0	-36.9
7/27/2011	1375.9	1.3	0.0	68.6	2.9	0.0	1314.6	114.1	11.8	7.1	8.4	0.0	0.0	-7.2
7/28/2011	1418.4	2.1	0.0	68.4	2.9	0.0	1368.9	116.6	11.8	7.1	8.4	0.0	0.0	-21.0
7/29/2011	1250.9	4.4	29.5	66.0	2.9	0.0	1349.3	110.9	11.8	7.1	8.4	0.0	0.0	-133.7
7/30/2011	1018.5	1.9	0.0	34.4	2.9	0.0	989.4	94.3	11.8	7.1	8.4	0.0	0.0	-53.1
7/31/2011	973.9	0.8	0.0	32.2	2.9	0.0	959.1	92.5	11.8	7.1	8.4	0.0	0.0	-69.1
8/1/2011	1552.8	4.4	0.0	31.2	2.9	0.0	1247.0	118.3	11.8	6.7	8.4	0.0	0.0	199.1
8/2/2011	1626.7	4.2	0.0	33.3	2.9	0.0	1509.2	125.9	11.8	6.7	8.4	0.0	0.0	5.1
8/3/2011	1649.1	3.1	0.0	52.8	2.9	0.0	1600.9	128.4	11.8	6.7	8.4	0.0	0.0	-48.2
8/4/2011	1551.2	1.2	0.0	51.4	2.9	0.0	1542.3	124.3	11.8	6.7	8.4	0.0	0.0	-86.7
8/5/2011	1472.2	2.7	0.0	48.6	2.9	0.0	1422.7	119.4	11.8	6.7	8.4	0.0	0.0	-42.5
8/6/2011	1481.6	2.4	0.0	56.3	2.9	0.0	1417.2	119.5	11.8	6.7	8.4	0.0	0.0	-20.4
8/7/2011	1531.8	3.0	0.0	55.3	2.9	0.0	1455.0	121.9	11.8	6.7	8.4	0.0	0.0	-10.6
8/8/2011	1553.6	0.9	0.0	54.9	2.9	0.0	1503.8	123.6	11.8	6.7	8.4	0.0	0.0	-41.9
8/9/2011	1534.8	3.2	0.0	50.6	2.9	0.0	1483.5	122.6	11.8	6.7	8.4	0.0	0.0	-41.3
8/10/2011	1516.1	2.3	0.0	49.3	2.9	0.0	1464.0	121.6	11.8	6.7	8.4	0.0	0.0	-41.8
8/11/2011	1522.7	3.2	0.0	45.1	2.9	0.0	1448.4	121.5	11.8	6.7	8.4	0.0	0.0	-22.8
8/12/2011	1565.2	4.2	0.0	44.9	2.9	0.0	1481.0	123.5	11.8	6.7	8.4	0.0	0.0	-14.0
8/13/2011	1604.2	2.8	0.0	49.6	2.9	0.0	1530.3	125.6	11.8	6.7	8.4	0.0	0.0	-23.3
8/14/2011	1631.4	6.8	0.0	55.4	2.9	0.0	1562.3	127.1	11.8	6.7	8.4	0.0	0.0	-19.7
8/15/2011	1636.2	4.3	0.0	62.2	2.9	0.0	1588.6	127.8	11.8	6.7	8.4	0.0	0.0	-37.4
8/16/2011	1619.9	1.6	0.0	60.9	2.9	0.0	1573.5	126.9	11.8	6.7	8.4	0.0	0.0	-41.9
8/17/2011	1620.0	2.9	0.0	50.6	2.9	0.0	1554.4	126.5	11.8	6.7	8.4	0.0	0.0	-31.4
8/18/2011	1640.8	2.1	0.0	58.4	2.9	0.0	1574.4	127.6	11.8	6.7	8.4	0.0	0.0	-24.6
8/19/2011	1650.0	2.2	0.0	51.1	2.9	0.0	1589.9	128.2	11.8	6.7	8.4	0.0	0.0	-38.6
8/20/2011	1643.7	5.3	0.0	59.4	2.9	0.0	1589.3	128.0	11.8	6.7	8.4	0.0	0.0	-32.9
8/21/2011	1638.2	1.1	0.0	48.2	2.9	0.0	1576.7	127.5	11.8	6.7	8.4	0.0	0.0	-40.6
8/22/2011	1631.9	4.5	0.0	53.4	2.9	0.0	1573.2	127.4	11.8	6.7	8.4	0.0	0.0	-34.7
8/23/2011	1624.9	3.2	0.0	54.9	2.9	0.0	1568.7	127.0	11.8	6.7	8.4	0.0	0.0	-36.6
8/24/2011	1627.1	2.3	0.0	52.0	2.9	0.0	1562.7	126.9	11.8	6.7	8.4	0.0	0.0	-32.1
8/25/2011	1698.3	3.7	0.0	53.4	2.9	0.0	1591.2	129.6	11.8	6.7	8.4	0.0	0.0	10.7
8/26/2011	1783.6	1.8	0.0	66.8	2.9	0.0	1709.0	134.3	11.8	6.7	8.4	0.0	0.0	-15.1
8/27/2011	1754.7	3.7	0.0	67.5	2.9	0.0	1734.2	134.0	11.8	6.7	8.4	0.0	0.0	-66.2
8/28/2011	1668.9	1.8	0.0	55.7	2.9	0.0	1639.7	129.7	11.8	6.7	8.4	0.0	0.0	-66.9
8/29/2011	1626.2	0.8	0.0	53.4	2.9	0.0	1570.3	127.1	11.8	6.7	8.4	0.0	0.0	-40.9
8/30/2011	1618.3	3.1	0.0	52.0	2.9	0.0	1560.3	126.7	11.8	6.7	8.4	0.0	0.0	-37.4



Table F1-3: RGCP Channel Water Budget Equation Analysis Segment 3

2010-12 Study Period

(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	MODFLOW Floodplain Recharge	Open Water Channel Evaporation	MODFLOW Riparian Evapo-transpiration	Diversions Authorized (None)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
8/31/2011	1487.2	2.4	0.0	49.9	2.9	0.0	1515.0	121.9	11.8	6.7	8.4	0.0	0.0	-121.2
9/1/2011	1283.2	0.6	0.0	33.3	2.9	0.0	1288.4	110.6	11.8	5.4	8.4	0.0	0.0	-104.5
9/2/2011	1284.1	3.1	0.0	52.6	2.9	0.0	1154.7	107.1	11.8	5.4	8.4	0.0	0.0	55.4
9/3/2011	1555.6	1.8	0.0	80.0	2.9	0.0	1447.5	122.5	11.8	5.4	8.4	0.0	0.0	44.8
9/4/2011	1646.8	3.1	0.0	85.5	2.9	0.0	1611.7	128.5	11.8	5.4	8.4	0.0	0.0	-27.4
9/5/2011	1653.8	2.6	0.0	82.5	2.9	0.0	1620.1	128.8	11.8	5.4	8.4	0.0	0.0	-32.6
9/6/2011	1663.8	3.4	0.0	104.8	2.9	0.0	1644.1	129.5	11.8	5.4	8.4	0.0	0.0	-24.3
9/7/2011	1678.2	3.6	0.0	81.9	2.9	0.0	1642.9	129.9	11.8	5.4	8.4	0.0	0.0	-31.7
9/8/2011	1691.6	1.3	0.0	78.7	2.9	0.0	1649.9	130.5	11.8	5.4	8.4	0.0	0.0	-31.4
9/9/2011	1701.8	1.3	0.0	81.0	2.9	0.0	1662.3	131.0	11.8	5.4	8.4	0.0	0.0	-31.8
9/10/2011	1693.4	1.6	0.0	84.8	2.9	0.0	1668.2	130.9	11.8	5.4	8.4	0.0	0.0	-42.0
9/11/2011	1282.5	2.0	145.9	83.3	2.9	0.0	1514.6	115.5	11.8	5.4	8.4	0.0	0.0	-138.9
9/12/2011	719.5	3.7	162.7	22.9	2.9	0.0	908.0	81.0	11.8	5.4	8.4	0.0	0.0	-102.7
9/13/2011	99.5	1.9	98.9	3.6	2.9	0.0	204.9	61.1	11.8	5.4	8.4	0.0	0.0	-84.7
9/14/2011	17.3	2.1	37.3	0.0	2.9	0.0	57.5	50.4	11.8	5.4	8.4	0.0	0.0	-73.8
9/15/2011	11.1	1.3	0.0	0.9	2.9	0.0	9.0	11.1	11.8	5.4	8.4	0.0	0.0	-29.4
9/16/2011	11.0	2.3	0.0	0.8	2.9	0.0	6.5	11.0	11.8	5.4	8.4	0.0	0.0	-26.0
9/17/2011	10.9	1.0	0.0	0.6	2.9	0.0	6.3	10.9	11.8	5.4	8.4	0.0	0.0	-27.3
9/18/2011	11.0	1.9	0.0	0.6	2.9	0.0	6.2	11.0	11.8	5.4	8.4	0.0	0.0	-26.3
9/19/2011	11.7	1.9	0.0	0.6	2.9	0.0	6.3	11.7	11.8	5.4	8.4	0.0	0.0	-26.4
9/20/2011	14.8	2.1	0.0	0.6	2.9	0.0	7.4	14.8	11.8	5.4	8.4	0.0	0.0	-27.3
9/21/2011	16.5	0.3	0.0	0.6	2.9	0.0	10.3	16.5	11.8	5.4	8.4	0.0	0.0	-32.0
9/22/2011	14.6	2.3	0.0	0.6	2.9	0.0	10.9	14.6	11.8	5.4	8.4	0.0	0.0	-30.6
9/23/2011	12.7	2.4	0.0	0.6	2.9	0.0	9.2	12.7	11.8	5.4	8.4	0.0	0.0	-28.8
9/24/2011	11.1	0.9	0.0	0.6	2.9	0.0	7.4	11.1	11.8	5.4	8.4	0.0	0.0	-28.5
9/25/2011	10.8	2.3	0.0	0.6	2.9	0.0	6.3	10.8	11.8	5.4	8.4	0.0	0.0	-25.9
9/26/2011	10.7	0.8	0.0	0.6	2.9	0.0	6.1	10.7	11.8	5.4	8.4	0.0	0.0	-27.3
9/27/2011	10.8	0.2	0.0	0.6	2.9	0.0	6.1	10.8	11.8	5.4	8.4	0.0	0.0	-27.9
9/28/2011	10.8	0.1	0.0	0.6	2.9	0.0	6.2	10.8	11.8	5.4	8.4	0.0	0.0	-28.0
9/29/2011	10.8	1.0	0.0	0.6	2.9	0.0	6.2	10.8	11.8	5.4	8.4	0.0	0.0	-27.2
9/30/2011	10.7	1.0	0.0	0.6	2.9	0.0	6.1	10.7	11.8	5.4	8.4	0.0	0.0	-27.0
10/1/2011	10.8	1.6	0.0	0.6	2.9	0.0	6.2	10.8	11.8	0.0	8.4	0.0	0.0	-21.2
10/2/2011	10.8	0.4	0.0	0.6	2.9	0.0	6.1	10.8	11.8	0.0	8.4	0.0	0.0	-22.3
10/3/2011	10.8	1.2	0.0	0.6	2.9	0.0	6.1	10.8	11.8	0.0	8.4	0.0	0.0	-21.5
10/4/2011	10.7	1.3	0.0	0.6	2.9	0.0	6.2	10.7	11.8	0.0	8.4	0.0	0.0	-21.6
10/5/2011	10.7	1.1	0.0	0.7	2.9	0.0	6.1	10.7	11.8	0.0	8.4	0.0	0.0	-21.6
10/6/2011	10.7	0.3	0.0	0.7	2.9	0.0	6.1	10.7	11.8	0.0	8.4	0.0	0.0	-22.4
10/7/2011	10.8	0.3	0.0	0.7	2.9	0.0	6.1	10.8	11.8	0.0	8.4	0.0	0.0	-22.3
10/8/2011	10.7	0.7	0.0	0.7	2.9	0.0	6.1	10.7	11.8	0.0	8.4	0.0	0.0	-22.0
10/9/2011	10.7	0.8	0.0	0.7	2.9	0.0	6.1	10.7	11.8	0.0	8.4	0.0	0.0	-21.9
10/10/2011	10.7	0.5	0.0	0.7	2.9	0.0	6.1	10.7	11.8	0.0	8.4	0.0	0.0	-22.1
10/11/2011	10.7	1.7	0.0	0.7	2.9	0.0	6.0	10.7	11.8	0.0	8.4	0.0	0.0	-20.8
10/12/2011	10.7	0.4	0.0	0.7	2.9	0.0	6.1	10.7	11.8	0.0	8.4	0.0	0.0	-22.2
10/13/2011	10.7	1.1	0.0	0.7	2.9	0.0	6.2	10.7	11.8	0.0	8.4	0.0	0.0	-21.6
10/14/2011	10.7	0.7	0.0	0.7	2.9	0.0	6.1	10.7	11.8	0.0	8.4	0.0	0.0	-21.9
10/15/2011	10.7	1.3	0.0	0.7	2.9	0.0	6.1	10.7	11.8	0.0	8.4	0.0	0.0	-21.3
10/16/2011	10.7	0.3	0.0	0.7	2.9	0.0	6.1	10.7	11.8	0.0	8.4	0.0	0.0	-22.3
10/17/2011	10.8	3.2	0.0	0.7	2.9	0.0	6.1	10.8	11.8	0.0	8.4	0.0	0.0	-19.5
10/18/2011	10.7	0.9	0.0	0.7	2.9	0.0	6.1	10.7	11.8	0.0	8.4	0.0	0.0	-21.7
10/19/2011	10.8	2.0	0.0	0.7	2.9	0.0	6.1	10.8	11.8	0.0	8.4	0.0	0.0	-20.6
10/20/2011	10.7	2.4	0.0	0.7	2.9	0.0	6.1	10.7	11.8	0.0	8.4	0.0	0.0	-20.2



Table F1-3: RGCP Channel Water Budget Equation Analysis Segment 3														
2010-12 Study Period														
(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
	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	MODFLOW Floodplain Recharge	Open Water Channel Evaporation	MODFLOW Riparian Evapo-transpiration	Diversions Authorized (None)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
Date														
10/21/2011	10.8	1.8	0.0	0.7	2.9	0.0	6.0	10.8	11.8	0.0	8.4	0.0	0.0	-20.7
10/22/2011	10.7	1.7	0.0	0.7	2.9	0.0	6.1	10.7	11.8	0.0	8.4	0.0	0.0	-21.0
10/23/2011	10.6	1.7	0.0	0.7	2.9	0.0	6.1	10.6	11.8	0.0	8.4	0.0	0.0	-21.0
10/24/2011	10.8	1.8	0.0	0.7	2.9	0.0	6.2	10.8	11.8	0.0	8.4	0.0	0.0	-20.9
10/25/2011	10.7	1.0	0.0	0.7	2.9	0.0	6.1	10.7	11.8	0.0	8.4	0.0	0.0	-21.6
10/26/2011	10.7	1.8	0.0	0.7	2.9	0.0	6.1	10.7	11.8	0.0	8.4	0.0	0.0	-20.9
10/27/2011	10.7	1.4	0.0	0.7	2.9	0.0	6.1	10.7	11.8	0.0	8.4	0.0	0.0	-21.2
10/28/2011	10.8	2.0	0.0	0.8	2.9	0.0	6.1	10.8	11.8	0.0	8.4	0.0	0.0	-20.5
10/29/2011	10.8	0.9	0.0	0.8	2.9	0.0	6.3	10.8	11.8	0.0	8.4	0.0	0.0	-21.9
10/30/2011	10.6	0.7	0.0	0.8	2.9	0.0	6.2	10.6	11.8	0.0	8.4	0.0	0.0	-21.9
10/31/2011	10.8	0.4	0.0	0.8	2.9	0.0	6.2	10.8	11.8	0.0	8.4	0.0	0.0	-22.2
11/1/2011	10.8	1.2	0.0	0.8	2.9	0.1	6.3	10.8	0.1	0.0	2.9	0.0	0.0	-4.4
11/2/2011	10.8	0.3	0.0	0.8	2.9	0.1	6.3	10.8	0.1	0.0	2.9	0.0	0.0	-5.2
11/3/2011	10.8	1.2	0.0	0.8	2.9	0.1	6.3	10.8	0.1	0.0	2.9	0.0	0.0	-4.4
11/4/2011	10.9	0.3	0.0	0.8	2.9	0.1	6.5	10.9	0.1	0.0	2.9	0.0	0.0	-5.4
11/5/2011	11.0	1.5	0.0	0.8	2.9	0.1	6.6	11.0	0.1	0.0	2.9	0.0	0.0	-4.3
11/6/2011	11.1	0.3	0.0	0.8	2.9	0.1	6.7	11.1	0.1	0.0	2.9	0.0	0.0	-5.6
11/7/2011	11.1	1.0	0.0	0.8	2.9	0.1	6.8	11.1	0.1	0.0	2.9	0.0	0.0	-5.0
11/8/2011	11.2	0.9	0.0	0.9	2.9	0.1	6.8	11.2	0.1	0.0	2.9	0.0	0.0	-5.1
11/9/2011	11.3	0.5	0.0	0.9	2.9	0.1	7.0	11.3	0.1	0.0	2.9	0.0	0.0	-5.6
11/10/2011	11.3	0.1	0.0	0.9	2.9	0.1	7.1	11.3	0.1	0.0	2.9	0.0	0.0	-6.1
11/11/2011	11.4	0.8	0.0	0.9	2.9	0.1	7.1	11.4	0.1	0.0	2.9	0.0	0.0	-5.5
11/12/2011	11.7	0.5	0.0	0.8	2.9	0.1	7.2	11.7	0.1	0.0	2.9	0.0	0.0	-5.9
11/13/2011	11.7	0.7	0.0	0.8	2.9	0.1	7.4	11.7	0.1	0.0	2.9	0.0	0.0	-5.9
11/14/2011	11.8	3.2	0.0	0.8	2.9	0.1	7.5	11.8	0.1	0.0	2.9	0.0	0.0	-3.6
11/15/2011	11.9	0.6	0.0	0.8	2.9	0.1	7.5	11.9	0.1	0.0	2.9	0.0	0.0	-6.1
11/16/2011	11.8	1.0	0.0	0.9	2.9	0.1	7.7	11.8	0.1	0.0	2.9	0.0	0.0	-5.8
11/17/2011	11.7	0.1	0.0	0.9	2.9	0.1	7.7	11.7	0.1	0.0	2.9	0.0	0.0	-6.8
11/18/2011	11.9	0.1	0.0	0.9	2.9	0.1	7.6	11.9	0.1	0.0	2.9	0.0	0.0	-6.6
11/19/2011	11.7	0.5	0.0	0.9	2.9	0.1	7.5	11.7	0.1	0.0	2.9	0.0	0.0	-6.2
11/20/2011	11.8	0.0	0.0	0.9	2.9	0.1	7.5	11.8	0.1	0.0	2.9	0.0	0.0	-6.7
11/21/2011	11.8	0.1	0.0	0.9	2.9	0.1	7.6	11.8	0.1	0.0	2.9	0.0	0.0	-6.7
11/22/2011	11.9	0.2	0.0	0.9	2.9	0.1	7.6	11.9	0.1	0.0	2.9	0.0	0.0	-6.6
11/23/2011	11.9	0.2	0.0	0.9	2.9	0.1	7.6	11.9	0.1	0.0	2.9	0.0	0.0	-6.5
11/24/2011	11.9	0.6	0.0	0.9	2.9	0.1	7.7	11.9	0.1	0.0	2.9	0.0	0.0	-6.2
11/25/2011	11.9	0.0	0.0	0.9	2.9	0.1	7.7	11.9	0.1	0.0	2.9	0.0	0.0	-6.8
11/26/2011	11.9	0.4	0.0	0.9	2.9	0.1	7.8	11.9	0.1	0.0	2.9	0.0	0.0	-6.4
11/27/2011	11.9	1.4	0.0	1.0	2.9	0.1	7.7	11.9	0.1	0.0	2.9	0.0	0.0	-5.3
11/28/2011	11.9	0.9	0.0	1.0	2.9	0.1	7.8	11.9	0.1	0.0	2.9	0.0	0.0	-6.0
11/29/2011	11.9	0.7	0.0	1.0	2.9	0.1	7.8	11.9	0.1	0.0	2.9	0.0	0.0	-6.2
11/30/2011	11.9	0.3	0.0	1.0	2.9	0.1	7.8	11.9	0.1	0.0	2.9	0.0	0.0	-6.6
12/1/2011	11.9	0.9	0.0	1.0	2.9	0.1	7.8	11.9	0.1	0.0	2.9	0.0	0.0	-6.0
12/2/2011	11.9	0.1	0.0	1.0	2.9	0.1	7.8	11.9	0.1	0.0	2.9	0.0	0.0	-6.8
12/3/2011	11.9	1.3	0.0	1.0	2.9	0.1	7.7	11.9	0.1	0.0	2.9	0.0	0.0	-5.5
12/4/2011	11.9	0.6	0.0	1.0	2.9	0.1	7.8	11.9	0.1	0.0	2.9	0.0	0.0	-6.2
12/5/2011	11.8	1.5	0.0	1.0	2.9	0.1	7.9	11.8	0.1	0.0	2.9	0.0	0.0	-5.4
12/6/2011	11.9	0.6	0.0	0.0	2.9	0.1	7.3	11.9	0.1	0.0	2.9	0.0	0.0	-6.7
12/7/2011	11.9	0.6	0.0	1.2	2.9	0.1	7.6	11.9	0.1	0.0	2.9	0.0	0.0	-5.8
12/8/2011	11.9	1.2	0.0	1.2	2.9	0.1	8.0	11.9	0.1	0.0	2.9	0.0	0.0	-5.7
12/9/2011	12.0	1.1	0.0	1.1	2.9	0.1	8.0	12.0	0.1	0.0	2.9	0.0	0.0	-5.9
12/10/2011	12.0	1.0	0.0	1.1	2.9	0.1	7.8	12.0	0.1	0.0	2.9	0.0	0.0	-5.8

Table F1-3: RGCP Channel Water Budget Equation Analysis Segment 3

2010-12 Study Period

(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
	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	MODFLOW Floodplain Recharge	Open Water Channel Evaporation	MODFLOW Riparian Evapo- transpiration	Diversions Authorized (None)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
Date														
12/11/2011	11.9	1.1	0.0	1.0	2.9	0.1	7.9	11.9	0.1	0.0	2.9	0.0	0.0	-5.7
12/12/2011	12.0	0.4	0.0	1.0	2.9	0.1	7.9	12.0	0.1	0.0	2.9	0.0	0.0	-6.5
12/13/2011	11.9	1.0	0.0	1.0	2.9	0.1	7.8	11.9	0.1	0.0	2.9	0.0	0.0	-5.8
12/14/2011	12.0	1.2	0.0	1.0	2.9	0.1	7.9	12.0	0.1	0.0	2.9	0.0	0.0	-5.8
12/15/2011	11.9	2.0	0.0	1.0	2.9	0.1	7.9	11.9	0.1	0.0	2.9	0.0	0.0	-4.9
12/16/2011	12.0	0.3	0.0	1.0	2.9	0.1	7.9	12.0	0.1	0.0	2.9	0.0	0.0	-6.6
12/17/2011	11.9	1.0	0.0	1.0	2.9	0.1	7.9	11.9	0.1	0.0	2.9	0.0	0.0	-5.9
12/18/2011	11.9	1.4	0.0	1.0	2.9	0.1	7.9	11.9	0.1	0.0	2.9	0.0	0.0	-5.5
12/19/2011	12.0	0.7	0.0	1.0	2.9	0.1	7.8	12.0	0.1	0.0	2.9	0.0	0.0	-6.2
12/20/2011	11.9	1.2	0.0	1.0	2.9	0.1	7.8	11.9	0.1	0.0	2.9	0.0	0.0	-5.7
12/21/2011	12.0	0.1	0.0	1.0	2.9	0.1	7.8	12.0	0.1	0.0	2.9	0.0	0.0	-6.6
12/22/2011	12.0	1.4	0.0	1.0	2.9	0.1	7.8	12.0	0.1	0.0	2.9	0.0	0.0	-5.4
12/23/2011	11.9	0.6	0.0	1.1	2.9	0.1	7.8	11.9	0.1	0.0	2.9	0.0	0.0	-6.2
12/24/2011	12.0	0.8	0.0	1.1	2.9	0.1	7.8	12.0	0.1	0.0	2.9	0.0	0.0	-6.0
12/25/2011	11.9	0.8	0.0	1.1	2.9	0.1	7.8	11.9	0.1	0.0	2.9	0.0	0.0	-6.0
12/26/2011	12.0	1.8	0.0	1.1	2.9	0.1	7.9	12.0	0.1	0.0	2.9	0.0	0.0	-5.1
12/27/2011	11.9	1.3	0.0	1.1	2.9	0.1	8.0	11.9	0.1	0.0	2.9	0.0	0.0	-5.7
12/28/2011	12.2	0.6	0.0	1.1	2.9	0.1	8.0	12.2	0.1	0.0	2.9	0.0	0.0	-6.3
12/29/2011	12.6	1.6	0.0	1.1	2.9	0.1	8.2	12.6	0.1	0.0	2.9	0.0	0.0	-5.6
12/30/2011	12.5	1.3	0.0	1.1	2.9	0.1	8.4	12.5	0.1	0.0	2.9	0.0	0.0	-6.1
12/31/2011	12.0	0.2	0.0	1.0	2.9	0.1	8.4	12.0	0.1	0.0	2.9	0.0	0.0	-7.2
1/1/2012	12.0	0.9	0.0	1.0	2.9	0.1	8.0	12.0	0.1	0.0	2.9	0.0	0.0	-6.0
1/2/2012	11.8	0.8	0.0	1.1	2.9	0.1	7.9	11.8	0.1	0.0	2.9	0.0	0.0	-6.1
1/3/2012	11.9	0.3	0.0	1.1	2.9	0.1	7.8	11.9	0.1	0.0	2.9	0.0	0.0	-6.4
1/4/2012	12.0	0.8	0.0	1.0	2.9	0.1	8.0	12.0	0.1	0.0	2.9	0.0	0.0	-6.1
1/5/2012	11.8	0.3	0.0	1.0	2.9	0.1	8.0	11.8	0.1	0.0	2.9	0.0	0.0	-6.6
1/6/2012	11.8	1.0	0.0	1.1	2.9	0.1	7.8	11.8	0.1	0.0	2.9	0.0	0.0	-5.7
1/7/2012	11.7	1.2	0.0	1.0	2.9	0.1	7.7	11.7	0.1	0.0	2.9	0.0	0.0	-5.5
1/8/2012	11.8	0.8	0.0	1.0	2.9	0.1	7.7	11.8	0.1	0.0	2.9	0.0	0.0	-6.0
1/9/2012	11.8	0.7	0.0	1.0	2.9	0.1	7.7	11.8	0.1	0.0	2.9	0.0	0.0	-6.0
1/10/2012	11.8	0.6	0.0	1.0	2.9	0.1	7.7	11.8	0.1	0.0	2.9	0.0	0.0	-6.2
1/11/2012	11.8	1.3	0.0	1.0	2.9	0.1	7.7	11.8	0.1	0.0	2.9	0.0	0.0	-5.4
1/12/2012	11.8	0.4	0.0	1.0	2.9	0.1	7.7	11.8	0.1	0.0	2.9	0.0	0.0	-6.3
1/13/2012	11.8	1.4	0.0	1.1	2.9	0.1	7.7	11.8	0.1	0.0	2.9	0.0	0.0	-5.3
1/14/2012	12.0	0.2	0.0	1.1	2.9	0.1	7.8	12.0	0.1	0.0	2.9	0.0	0.0	-6.6
1/15/2012	12.4	0.7	0.0	1.0	2.9	0.1	8.0	12.4	0.1	0.0	2.9	0.0	0.0	-6.3
1/16/2012	11.8	0.1	0.0	1.0	2.9	0.1	8.1	11.8	0.1	0.0	2.9	0.0	0.0	-7.0
1/17/2012	11.7	0.3	0.0	1.0	2.9	0.1	7.6	11.7	0.1	0.0	2.9	0.0	0.0	-6.4
1/18/2012	11.8	1.0	0.0	1.0	2.9	0.1	7.7	11.8	0.1	0.0	2.9	0.0	0.0	-5.6
1/19/2012	11.7	0.7	0.0	1.0	2.9	0.1	7.5	11.7	0.1	0.0	2.9	0.0	0.0	-5.8
1/20/2012	11.7	0.9	0.0	1.0	2.9	0.1	7.6	11.7	0.1	0.0	2.9	0.0	0.0	-5.7
1/21/2012	11.7	0.6	0.0	1.0	2.9	0.1	7.5	11.7	0.1	0.0	2.9	0.0	0.0	-5.9
1/22/2012	11.7	0.8	0.0	0.9	2.9	0.1	7.5	11.7	0.1	0.0	2.9	0.0	0.0	-5.8
1/23/2012	11.6	0.1	0.0	1.0	2.9	0.1	7.5	11.6	0.1	0.0	2.9	0.0	0.0	-6.5
1/24/2012	11.7	0.8	0.0	1.0	2.9	0.1	7.5	11.7	0.1	0.0	2.9	0.0	0.0	-5.8
1/25/2012	11.6	0.7	0.0	1.0	2.9	0.1	7.5	11.6	0.1	0.0	2.9	0.0	0.0	-5.8
1/26/2012	11.6	0.3	0.0	1.0	2.9	0.1	7.5	11.6	0.1	0.0	2.9	0.0	0.0	-6.2
1/27/2012	11.7	0.6	0.0	1.0	2.9	0.1	7.5	11.7	0.1	0.0	2.9	0.0	0.0	-6.0
1/28/2012	11.6	0.4	0.0	0.9	2.9	0.1	7.4	11.6	0.1	0.0	2.9	0.0	0.0	-6.1
1/29/2012	11.6	0.2	0.0	1.0	2.9	0.1	7.5	11.6	0.1	0.0	2.9	0.0	0.0	-6.3
1/30/2012	11.6	0.4	0.0	1.0	2.9	0.1	7.4	11.6	0.1	0.0	2.9	0.0	0.0	-6.0

Table F1-3: RGCP Channel Water Budget Equation Analysis Segment 3

2010-12 Study Period

(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	MODFLOW Floodplain Recharge	Open Water Channel Evaporation	MODFLOW Riparian Evapo- transpiration	Diversions Authorized (None)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
1/31/2012	11.6	0.7	0.0	1.0	2.9	0.1	7.5	11.6	0.1	0.0	2.9	0.0	0.0	-5.8
2/1/2012	11.6	0.4	0.0	1.0	2.9	0.1	7.4	11.6	0.1	0.0	2.9	0.0	0.0	-6.1
2/2/2012	11.6	0.2	0.0	1.0	2.9	0.1	7.3	11.6	0.1	0.0	2.9	0.0	0.0	-6.2
2/3/2012	11.5	0.6	0.0	1.0	2.9	0.1	7.5	11.5	0.1	0.0	2.9	0.0	0.0	-5.9
2/4/2012	11.5	0.7	0.0	1.0	2.9	0.1	7.4	11.5	0.1	0.0	2.9	0.0	0.0	-5.7
2/5/2012	11.5	1.0	0.0	1.0	2.9	0.1	7.3	11.5	0.1	0.0	2.9	0.0	0.0	-5.4
2/6/2012	11.5	0.6	0.0	1.0	2.9	0.1	7.3	11.5	0.1	0.0	2.9	0.0	0.0	-5.7
2/7/2012	11.5	0.7	0.0	1.0	2.9	0.1	7.3	11.5	0.1	0.0	2.9	0.0	0.0	-5.6
2/8/2012	11.5	0.6	0.0	1.0	2.9	0.1	7.3	11.5	0.1	0.0	2.9	0.0	0.0	-5.8
2/9/2012	11.4	0.9	0.0	1.0	2.9	0.1	7.3	11.4	0.1	0.0	2.9	0.0	0.0	-5.5
2/10/2012	11.4	0.2	0.0	1.0	2.9	0.1	7.3	11.4	0.1	0.0	2.9	0.0	0.0	-6.1
2/11/2012	11.4	0.3	0.0	1.0	2.9	0.1	7.2	11.4	0.1	0.0	2.9	0.0	0.0	-6.0
2/12/2012	11.4	2.0	0.0	1.0	2.9	0.1	7.2	11.4	0.1	0.0	2.9	0.0	0.0	-4.3
2/13/2012	11.4	0.5	0.0	1.0	2.9	0.1	7.2	11.4	0.1	0.0	2.9	0.0	0.0	-5.8
2/14/2012	11.3	1.0	0.0	1.0	2.9	0.1	7.1	11.3	0.1	0.0	2.9	0.0	0.0	-5.2
2/15/2012	11.3	0.4	0.0	1.0	2.9	0.1	7.2	11.3	0.1	0.0	2.9	0.0	0.0	-5.9
2/16/2012	11.2	0.6	0.0	1.0	2.9	0.1	7.3	11.2	0.1	0.0	2.9	0.0	0.0	-5.7
2/17/2012	11.3	0.8	0.0	1.0	2.9	0.1	7.1	11.3	0.1	0.0	2.9	0.0	0.0	-5.4
2/18/2012	11.3	0.2	0.0	1.0	2.9	0.1	7.1	11.3	0.1	0.0	2.9	0.0	0.0	-5.9
2/19/2012	11.2	0.4	0.0	1.0	2.9	0.1	7.0	11.2	0.1	0.0	2.9	0.0	0.0	-5.6
2/20/2012	11.2	0.5	0.0	1.0	2.9	0.1	7.0	11.2	0.1	0.0	2.9	0.0	0.0	-5.5
2/21/2012	11.1	1.4	0.0	1.0	2.9	0.1	6.8	11.1	0.1	0.0	2.9	0.0	0.0	-4.5
2/22/2012	11.0	0.6	0.0	0.9	2.9	0.1	6.9	11.0	0.1	0.0	2.9	0.0	0.0	-5.4
2/23/2012	11.0	0.1	0.0	0.9	2.9	0.1	6.7	11.0	0.1	0.0	2.9	0.0	0.0	-5.7
2/24/2012	11.0	1.7	0.0	0.9	2.9	0.1	6.8	11.0	0.1	0.0	2.9	0.0	0.0	-4.2
2/25/2012	11.0	0.3	0.0	0.9	2.9	0.1	6.8	11.0	0.1	0.0	2.9	0.0	0.0	-5.6
2/26/2012	11.0	0.3	0.0	0.9	2.9	0.1	6.8	11.0	0.1	0.0	2.9	0.0	0.0	-5.6
2/27/2012	10.9	0.0	0.0	0.9	2.9	0.1	6.7	10.9	0.1	0.0	2.9	0.0	0.0	-5.8
2/28/2012	10.8	0.1	0.0	0.9	2.9	0.1	6.5	10.8	0.1	0.0	2.9	0.0	0.0	-5.5
2/29/2012	10.8	0.0	0.0	0.9	2.9	0.1	6.5	10.8	0.1	0.0	2.9	0.0	0.0	-5.6
3/1/2012	10.8	1.0	0.0	0.9	2.9	0.0	6.5	10.8	11.8	2.7	8.4	0.0	0.0	-24.5
3/2/2012	10.8	0.7	0.0	0.9	2.9	0.0	6.5	10.8	11.8	2.7	8.4	0.0	0.0	-24.8
3/3/2012	10.8	0.8	0.0	0.9	2.9	0.0	6.4	10.8	11.8	2.7	8.4	0.0	0.0	-24.6
3/4/2012	10.8	0.5	0.0	0.9	2.9	0.0	6.3	10.8	11.8	2.7	8.4	0.0	0.0	-24.8
3/5/2012	10.8	0.1	0.0	0.9	2.9	0.0	6.4	10.8	11.8	2.7	8.4	0.0	0.0	-25.3
3/6/2012	10.8	0.1	0.0	0.9	2.9	0.0	6.4	10.8	11.8	2.7	8.4	0.0	0.0	-25.3
3/7/2012	10.7	0.4	0.0	0.9	2.9	0.0	6.4	10.7	11.8	2.7	8.4	0.0	0.0	-25.0
3/8/2012	10.8	0.3	0.0	0.9	2.9	0.0	6.3	10.8	11.8	2.7	8.4	0.0	0.0	-25.1
3/9/2012	10.8	0.1	0.0	0.9	2.9	0.0	6.3	10.8	11.8	2.7	8.4	0.0	0.0	-25.2
3/10/2012	10.8	0.6	0.0	1.0	2.9	0.0	6.4	10.8	11.8	2.7	8.4	0.0	0.0	-24.8
3/11/2012	10.8	0.7	0.0	0.9	2.9	0.0	6.3	10.8	11.8	2.7	8.4	0.0	0.0	-24.5
3/12/2012	10.8	0.7	0.0	0.9	2.9	0.0	6.4	10.8	11.8	2.7	8.4	0.0	0.0	-24.7
3/13/2012	10.8	0.3	0.0	0.9	2.9	0.0	6.3	10.8	11.8	2.7	8.4	0.0	0.0	-25.1
3/14/2012	10.8	0.3	0.0	0.9	2.9	0.0	6.3	10.8	11.8	2.7	8.4	0.0	0.0	-25.1
3/15/2012	10.8	0.6	0.0	0.9	2.9	0.0	6.3	10.8	11.8	2.7	8.4	0.0	0.0	-24.8
3/16/2012	10.7	0.0	0.0	0.9	2.9	0.0	6.2	10.7	11.8	2.7	8.4	0.0	0.0	-25.3
3/17/2012	10.8	0.0	0.0	0.8	2.9	0.0	6.3	10.8	11.8	2.7	8.4	0.0	0.0	-25.3
3/18/2012	10.8	0.6	0.0	0.8	2.9	0.0	6.3	10.8	11.8	2.7	8.4	0.0	0.0	-24.8
3/19/2012	10.8	0.2	0.0	0.9	2.9	0.0	6.2	10.8	11.8	2.7	8.4	0.0	0.0	-25.1
3/20/2012	10.8	0.5	0.0	0.9	2.9	0.0	6.3	10.8	11.8	2.7	8.4	0.0	0.0	-24.8
3/21/2012	10.8	0.0	0.0	0.9	2.9	0.0	6.3	10.8	11.8	2.7	8.4	0.0	0.0	-25.3

Table F1-3: RGCP Channel Water Budget Equation Analysis Segment 3

2010-12 Study Period

(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	MODFLOW Floodplain Recharge	Open Water Channel Evaporation	MODFLOW Riparian Evapo- transpiration	Diversions Authorized (None)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
3/22/2012	10.8	0.2	0.0	0.9	2.9	0.0	6.3	10.8	11.8	2.7	8.4	0.0	0.0	-25.1
3/23/2012	10.8	0.0	0.0	0.9	2.9	0.0	6.3	10.8	11.8	2.7	8.4	0.0	0.0	-25.4
3/24/2012	10.9	0.1	0.0	0.8	2.9	0.0	6.3	10.9	11.8	2.7	8.4	0.0	0.0	-25.3
3/25/2012	10.8	0.0	0.0	0.8	2.9	0.0	6.3	10.8	11.8	2.7	8.4	0.0	0.0	-25.4
3/26/2012	10.8	0.0	0.0	0.8	2.9	0.0	6.2	10.8	11.8	2.7	8.4	0.0	0.0	-25.3
3/27/2012	10.8	1.0	0.0	0.8	2.9	0.0	6.2	10.8	11.8	2.7	8.4	0.0	0.0	-24.3
3/28/2012	10.7	0.4	0.0	0.8	2.9	0.0	6.2	10.7	11.8	2.7	8.4	0.0	0.0	-24.8
3/29/2012	10.8	0.2	0.0	0.8	2.9	0.0	6.2	10.8	11.8	2.7	8.4	0.0	0.0	-25.1
3/30/2012	10.8	0.0	0.0	0.8	2.9	0.0	6.2	10.8	11.8	2.7	8.4	0.0	0.0	-25.3
3/31/2012	10.8	0.1	0.0	0.8	2.9	0.0	6.3	10.8	11.8	2.7	8.4	0.0	0.0	-25.3
4/1/2012	425.3	0.1	0.0	0.8	2.9	0.0	383.0	48.0	11.8	5.9	8.4	0.0	0.0	-28.0
4/2/2012	425.4	0.5	0.0	0.8	2.9	0.0	383.2	48.0	11.8	5.9	8.4	0.0	0.0	-27.7
4/3/2012	442.6	0.4	0.0	0.9	2.9	0.0	383.0	49.1	11.8	5.9	8.4	0.0	0.0	-11.4
4/4/2012	2003.5	0.5	0.0	0.8	2.9	0.0	1873.9	143.7	11.8	5.9	8.4	0.0	0.0	-35.9
4/5/2012	2133.9	0.7	0.0	4.4	2.9	0.0	1937.2	148.3	11.8	5.9	8.4	0.0	0.0	30.2
4/6/2012	2431.5	0.8	0.0	61.8	2.9	0.0	2232.9	161.2	11.8	5.9	8.4	0.0	0.0	76.9
4/7/2012	2504.7	0.1	0.0	85.5	2.9	0.0	2449.6	166.6	11.8	5.9	8.4	0.0	0.0	-49.0
4/8/2012	2430.3	0.0	0.0	90.5	2.9	0.0	2402.0	163.9	11.8	5.9	8.4	0.0	0.0	-68.1
4/9/2012	2402.8	0.0	0.0	101.5	2.9	0.0	2358.1	162.4	11.8	5.9	8.4	0.0	0.0	-39.4
4/10/2012	2390.3	0.0	0.0	111.7	2.9	0.0	2361.4	162.1	11.8	5.9	8.4	0.0	0.0	-44.6
4/11/2012	2371.9	0.6	0.0	110.7	2.9	0.0	2344.8	161.4	11.8	5.9	8.4	0.0	0.0	-46.0
4/12/2012	2161.2	0.7	0.0	108.1	2.9	0.0	2200.6	153.5	11.8	5.9	8.4	0.0	0.0	-107.1
4/13/2012	2112.3	0.1	0.0	97.7	2.9	0.0	2091.3	150.2	11.8	5.9	8.4	0.0	0.0	-54.5
4/14/2012	1909.6	0.1	0.0	99.5	2.9	0.0	1982.9	142.9	11.8	5.9	8.4	0.0	0.0	-139.8
4/15/2012	1555.1	0.9	21.9	50.7	2.9	0.0	1630.6	126.2	11.8	5.9	8.4	0.0	0.0	-151.4
4/16/2012	1413.6	0.2	0.0	42.5	2.9	0.0	1351.8	116.1	11.8	5.9	8.4	0.0	0.0	-34.7
4/17/2012	1417.2	0.1	0.0	50.7	2.9	0.0	1358.6	116.4	11.8	5.9	8.4	0.0	0.0	-30.1
4/18/2012	1372.6	0.1	0.0	51.0	2.9	0.0	1339.3	114.6	11.8	5.9	8.4	0.0	0.0	-53.3
4/19/2012	1351.6	0.1	0.0	48.7	2.9	0.0	1307.3	113.2	11.8	5.9	8.4	0.0	0.0	-43.3
4/20/2012	1337.5	0.0	0.0	48.3	2.9	0.0	1301.2	112.7	11.8	5.9	8.4	0.0	0.0	-51.1
4/21/2012	1235.3	0.0	0.0	42.2	2.9	0.0	1236.3	108.0	11.8	5.9	8.4	0.0	0.0	-89.9
4/22/2012	1131.7	0.6	0.0	33.3	2.9	0.0	1101.8	101.5	11.8	5.9	8.4	0.0	0.0	-60.8
4/23/2012	1097.5	0.5	0.0	29.6	2.9	0.0	1044.5	99.0	11.8	5.9	8.4	0.0	0.0	-39.0
4/24/2012	1102.1	0.4	0.0	29.5	2.9	0.0	1039.7	99.1	11.8	5.9	8.4	0.0	0.0	-29.8
4/25/2012	1067.8	0.3	0.0	27.1	2.9	0.0	1022.8	97.4	11.8	5.9	8.4	0.0	0.0	-48.2
4/26/2012	1096.6	0.2	0.0	25.8	2.9	0.0	1002.9	97.9	11.8	5.9	8.4	0.0	0.0	-1.3
4/27/2012	1201.7	0.5	0.0	34.6	2.9	0.0	1102.8	104.0	11.8	5.9	8.4	0.0	0.0	6.8
4/28/2012	1284.4	0.0	0.0	36.6	2.9	0.0	1193.4	108.7	11.8	5.9	8.4	0.0	0.0	-4.1
4/29/2012	1312.4	0.1	0.0	29.3	2.9	0.0	1283.5	111.6	11.8	5.9	8.4	0.0	0.0	-76.5
4/30/2012	1112.2	0.3	0.0	33.7	2.9	0.0	1130.8	101.6	11.8	5.9	8.4	0.0	0.0	-109.4
5/1/2012	1166.0	0.0	0.0	30.2	2.9	0.0	1049.7	101.2	11.8	9.3	8.4	0.0	0.0	19.0
5/2/2012	1176.0	1.1	0.0	28.0	2.9	0.0	1109.4	103.2	11.8	9.3	8.4	0.0	0.0	-34.0
5/3/2012	1173.9	0.9	0.0	27.4	2.9	0.0	1116.0	103.3	11.8	9.3	8.4	0.0	0.0	-43.7
5/4/2012	1151.7	0.2	0.0	27.3	2.9	0.0	1096.2	102.1	11.8	9.3	8.4	0.0	0.0	-45.6
5/5/2012	991.5	0.3	47.4	27.5	2.9	0.0	1069.3	96.7	11.8	9.3	8.4	0.0	0.0	-125.8
5/6/2012	658.5	0.3	76.8	6.0	2.9	0.0	744.2	73.0	11.8	9.3	8.4	0.0	0.0	-102.1
5/7/2012	482.6	0.7	39.0	0.3	2.9	0.0	524.7	57.8	11.8	9.3	8.4	0.0	0.0	-86.4
5/8/2012	676.3	0.0	0.0	0.8	2.9	0.0	418.7	55.3	11.8	9.3	8.4	0.0	0.0	176.7
5/9/2012	723.6	0.0	0.0	0.9	2.9	0.0	721.9	76.6	11.8	9.3	8.4	0.0	0.0	-100.5
5/10/2012	572.5	0.0	79.9	0.9	2.9	0.0	656.1	69.9	11.8	9.3	8.4	0.0	0.0	-99.3
5/11/2012	425.1	0.4	0.0	0.8	2.9	0.0	418.6	48.5	11.8	9.3	8.4	0.0	0.0	-67.3

Table F1-3: RGCP Channel Water Budget Equation Analysis Segment 3

2010-12 Study Period

(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	MODFLOW Floodplain Recharge	Open Water Channel Evaporation	MODFLOW Riparian Evapo-transpiration	Diversions Authorized (None)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
5/12/2012	425.3	0.0	0.0	0.8	2.9	0.0	382.8	48.0	11.8	9.3	8.4	0.0	0.0	-31.2
5/13/2012	425.3	0.1	0.0	0.8	2.9	0.0	383.1	48.0	11.8	9.3	8.4	0.0	0.0	-31.5
5/14/2012	425.3	0.6	0.0	0.8	2.9	0.0	383.1	48.0	11.8	9.3	8.4	0.0	0.0	-30.9
5/15/2012	425.3	0.7	0.0	0.8	2.9	0.0	383.1	48.0	11.8	9.3	8.4	0.0	0.0	-30.8
5/16/2012	425.4	1.1	0.0	0.8	2.9	0.0	383.2	48.0	11.8	9.3	8.4	0.0	0.0	-30.4
5/17/2012	425.4	0.3	0.0	0.8	2.9	0.0	383.0	48.0	11.8	9.3	8.4	0.0	0.0	-31.1
5/18/2012	673.7	0.3	0.0	0.8	2.9	0.0	383.1	53.6	11.8	9.3	8.4	0.0	0.0	211.6
5/19/2012	692.4	0.0	22.0	0.8	2.9	0.0	718.2	75.2	11.8	9.3	8.4	0.0	0.0	-104.6
5/20/2012	561.5	0.3	32.7	0.8	2.9	0.0	597.9	66.5	11.8	9.3	8.4	0.0	0.0	-95.6
5/21/2012	431.8	1.0	0.0	0.8	2.9	0.0	430.1	49.9	11.8	9.3	8.4	0.0	0.0	-73.0
5/22/2012	425.1	0.1	0.0	0.8	2.9	0.0	386.2	48.1	11.8	9.3	8.4	0.0	0.0	-34.8
5/23/2012	425.4	0.8	0.0	0.8	2.9	0.0	383.0	48.0	11.8	9.3	8.4	0.0	0.0	-30.5
5/24/2012	501.9	0.2	0.0	0.7	2.9	0.0	383.1	49.7	11.8	9.3	8.4	0.0	0.0	43.5
5/25/2012	539.8	1.0	10.7	0.8	2.9	0.0	554.1	63.8	11.8	9.3	8.4	0.0	0.0	-92.2
5/26/2012	425.5	0.1	0.0	0.8	2.9	0.0	413.8	48.4	11.8	9.3	8.4	0.0	0.0	-62.3
5/27/2012	424.7	0.6	0.0	0.8	2.9	0.0	382.5	47.9	11.8	9.3	8.4	0.0	0.0	-30.9
5/28/2012	425.3	0.6	0.0	0.8	2.9	0.0	382.7	48.0	11.8	9.3	8.4	0.0	0.0	-30.5
5/29/2012	425.4	0.3	0.0	0.8	2.9	0.0	383.1	48.0	11.8	9.3	8.4	0.0	0.0	-31.2
5/30/2012	425.5	0.0	0.0	0.8	2.9	0.0	383.1	48.0	11.8	9.3	8.4	0.0	0.0	-31.4
5/31/2012	1473.7	0.7	0.0	0.8	2.9	0.0	366.4	92.6	11.8	9.3	8.4	0.0	0.0	989.7
6/1/2012	789.8	0.4	315.2	0.8	2.9	0.0	1108.6	90.2	11.8	9.5	8.4	0.0	0.0	-119.5
6/2/2012	630.8	0.3	0.0	0.8	2.9	0.0	587.1	66.9	11.8	9.5	8.4	0.0	0.0	-48.9
6/3/2012	772.2	0.6	0.0	0.8	2.9	0.0	568.9	72.4	11.8	9.5	8.4	0.0	0.0	105.5
6/4/2012	957.6	0.3	0.0	0.8	2.9	0.0	842.1	89.0	11.8	9.5	8.4	0.0	0.0	0.8
6/5/2012	767.0	0.2	25.8	0.8	2.9	0.0	796.4	80.1	11.8	9.5	8.4	0.0	0.0	-109.6
6/6/2012	865.9	0.7	0.0	1.2	2.9	0.0	687.5	81.0	11.8	9.5	8.4	0.0	0.0	72.5
6/7/2012	1247.2	1.6	0.0	14.5	2.9	0.0	991.5	103.1	11.8	9.5	8.4	0.0	0.0	142.0
6/8/2012	1289.5	0.7	0.0	20.3	2.9	0.0	1263.3	110.5	11.8	9.5	8.4	0.0	0.0	-89.9
6/9/2012	1280.7	0.2	0.0	11.1	2.9	0.0	1168.0	108.0	11.8	9.5	8.4	0.0	0.0	-10.7
6/10/2012	1533.2	2.2	0.0	38.4	2.9	0.0	1323.4	119.4	11.8	9.5	8.4	0.0	0.0	104.3
6/11/2012	1726.3	0.4	0.0	60.7	2.9	0.0	1613.8	130.9	11.8	9.5	8.4	0.0	0.0	16.0
6/12/2012	1944.9	0.6	0.0	69.1	2.9	0.0	1839.7	141.2	11.8	9.5	8.4	0.0	0.0	6.9
6/13/2012	1746.7	0.1	0.0	74.9	2.9	0.0	1772.9	134.5	11.8	9.5	8.4	0.0	0.0	-112.4
6/14/2012	1579.6	1.2	0.0	74.0	2.9	0.0	1600.6	126.3	11.8	9.5	8.4	0.0	0.0	-98.9
6/15/2012	1305.7	2.0	27.3	47.9	2.9	0.0	1383.8	113.5	11.8	9.5	8.4	0.0	0.0	-141.1
6/16/2012	1028.3	1.2	0.0	34.4	2.9	0.0	1063.4	97.1	11.8	9.5	8.4	0.0	0.0	-123.4
6/17/2012	1036.0	1.6	0.0	42.5	2.9	0.0	972.6	95.1	11.8	9.5	8.4	0.0	0.0	-14.3
6/18/2012	1222.3	2.9	0.0	32.8	2.9	0.0	1057.5	103.6	11.8	9.5	8.4	0.0	0.0	70.2
6/19/2012	1288.3	0.9	0.0	31.7	2.9	0.0	1233.9	109.7	11.8	9.5	8.4	0.0	0.0	-49.4
6/20/2012	1253.3	1.0	0.0	30.3	2.9	0.0	1184.9	107.5	11.8	9.5	8.4	0.0	0.0	-34.7
6/21/2012	1334.4	0.4	0.0	34.1	2.9	0.0	1228.2	111.1	11.8	9.5	8.4	0.0	0.0	3.0
6/22/2012	1347.5	0.3	0.0	29.8	2.9	0.0	1282.5	112.6	11.8	9.5	8.4	0.0	0.0	-44.4
6/23/2012	1246.0	1.0	0.0	32.5	2.9	0.0	1227.7	108.2	11.8	9.5	8.4	0.0	0.0	-83.2
6/24/2012	1107.1	1.1	0.0	28.3	2.9	0.0	1116.7	101.1	11.8	9.5	8.4	0.0	0.0	-108.0
6/25/2012	1019.3	0.6	0.0	29.3	2.9	0.0	992.4	95.0	11.8	9.5	8.4	0.0	0.0	-64.9
6/26/2012	1057.1	0.6	0.0	27.4	2.9	0.0	950.2	95.2	11.8	9.5	8.4	0.0	0.0	12.8
6/27/2012	1108.1	2.4	0.0	31.6	2.9	0.0	1034.8	99.2	11.8	9.5	8.4	0.0	0.0	-18.6
6/28/2012	1079.3	1.7	0.0	29.8	2.9	0.0	1060.1	98.8	11.8	9.5	8.4	0.0	0.0	-74.8
6/29/2012	900.1	3.0	9.4	15.7	2.9	0.0	928.1	89.0	11.8	9.5	8.4	0.0	0.0	-115.6
6/30/2012	865.6	1.8	0.0	8.5	2.9	0.0	783.5	83.6	11.8	9.5	8.4	0.0	0.0	-17.9
7/1/2012	952.6	1.0	0.0	17.6	2.9	0.0	845.6	88.9	11.8	7.1	8.4	0.0	0.0	12.3



Table F1-3: RGCP Channel Water Budget Equation Analysis Segment 3

2010-12 Study Period

(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	MODFLOW Floodplain Recharge	Open Water Channel Evaporation	MODFLOW Riparian Evapo- transpiration	Diversions Authorized (None)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
7/2/2012	1036.7	3.1	0.0	20.1	2.9	0.0	938.9	94.3	11.8	7.1	8.4	0.0	0.0	2.4
7/3/2012	1090.7	0.8	0.0	25.1	2.9	0.0	1003.0	97.8	11.8	7.1	8.4	0.0	0.0	-8.5
7/4/2012	1097.7	1.3	0.0	32.9	2.9	0.0	1053.7	99.3	11.8	7.1	8.4	0.0	0.0	-45.3
7/5/2012	1103.8	3.2	0.0	36.4	2.9	0.0	1049.0	99.4	11.8	7.1	8.4	0.0	0.0	-29.3
7/6/2012	1077.3	0.8	0.0	44.2	2.9	0.0	1050.3	98.5	11.8	7.1	8.4	0.0	0.0	-50.6
7/7/2012	1057.2	1.2	0.0	34.3	2.9	0.0	1011.5	96.8	11.8	7.1	8.4	0.0	0.0	-39.9
7/8/2012	985.5	1.4	0.0	67.6	2.9	0.0	1005.4	94.1	11.8	7.1	8.4	0.0	0.0	-69.3
7/9/2012	921.9	4.0	0.0	53.5	2.9	0.0	920.1	89.4	11.8	7.1	8.4	0.0	0.0	-54.4
7/10/2012	853.0	3.1	0.0	39.0	2.9	0.0	822.9	83.9	11.8	7.1	8.4	0.0	0.0	-36.2
7/11/2012	863.4	1.9	0.0	33.6	2.9	0.0	827.5	84.8	11.8	7.1	8.4	0.0	0.0	-37.7
7/12/2012	762.9	1.1	8.5	13.1	2.9	0.0	787.4	79.8	11.8	7.1	8.4	0.0	0.0	-105.8
7/13/2012	653.2	1.3	0.0	7.4	2.9	0.0	629.5	69.2	11.8	7.1	8.4	0.0	0.0	-61.0
7/14/2012	708.9	1.0	0.0	6.5	2.9	0.0	612.7	71.8	11.8	7.1	8.4	0.0	0.0	7.7
7/15/2012	694.9	2.2	0.0	3.1	2.9	0.0	640.1	72.0	11.8	7.1	8.4	0.0	0.0	-36.2
7/16/2012	787.4	1.3	0.0	6.6	2.9	0.0	676.5	77.6	11.8	7.1	8.4	0.0	0.0	16.9
7/17/2012	833.6	4.2	0.0	10.2	2.9	0.0	709.8	79.9	11.8	7.1	8.4	0.0	0.0	33.9
7/18/2012	1088.5	1.2	0.0	36.5	2.9	0.0	848.4	94.1	11.8	7.1	8.4	0.0	0.0	159.4
7/19/2012	1361.1	1.7	0.0	55.6	2.9	0.0	1252.7	112.4	11.8	7.1	8.4	0.0	0.0	29.1
7/20/2012	1257.5	1.6	0.0	43.7	2.9	0.0	1273.5	109.5	11.8	7.1	8.4	0.0	0.0	-104.5
7/21/2012	1196.4	3.2	0.0	36.5	2.9	0.0	1177.1	105.4	11.8	7.1	8.4	0.0	0.0	-70.7
7/22/2012	1083.1	1.3	0.0	34.9	2.9	0.0	1068.1	99.1	11.8	7.1	8.4	0.0	0.0	-72.3
7/23/2012	1090.1	3.0	0.0	35.9	2.9	0.0	1030.0	98.4	11.8	7.1	8.4	0.0	0.0	-23.7
7/24/2012	1245.0	1.0	0.0	41.3	2.9	0.0	1122.4	105.8	11.8	7.1	8.4	0.0	0.0	34.7
7/25/2012	1370.6	1.3	0.0	63.2	2.9	0.0	1275.6	113.2	11.8	7.1	8.4	0.0	0.0	22.0
7/26/2012	1340.0	3.0	0.0	62.1	2.9	0.0	1329.7	113.3	11.8	7.1	8.4	0.0	0.0	-62.3
7/27/2012	1179.5	1.3	0.0	56.2	2.9	0.0	1222.7	105.9	11.8	7.1	8.4	0.0	0.0	-115.9
7/28/2012	1057.8	2.1	0.0	48.8	2.9	0.0	1050.9	97.7	11.8	7.1	8.4	0.0	0.0	-64.3
7/29/2012	1004.5	4.4	0.0	46.3	2.9	0.0	989.8	94.4	11.8	7.1	8.4	0.0	0.0	-53.3
7/30/2012	1007.8	1.9	0.0	38.1	2.9	0.0	955.0	93.6	11.8	7.1	8.4	0.0	0.0	-25.1
7/31/2012	1048.8	0.8	0.0	32.6	2.9	0.0	975.6	95.6	11.8	7.1	8.4	0.0	0.0	-13.4
8/1/2012	1143.0	4.4	0.0	38.1	2.9	0.0	1032.8	100.3	11.8	6.7	8.4	0.0	0.0	28.5
8/2/2012	1204.8	4.2	0.0	50.1	2.9	0.0	1150.3	105.1	11.8	6.7	8.4	0.0	0.0	-20.2
8/3/2012	1042.1	3.1	4.7	35.5	2.9	0.0	1085.2	98.1	11.8	6.7	8.4	0.0	0.0	-121.8
8/4/2012	871.2	1.2	0.0	18.0	2.9	0.0	883.0	86.6	11.8	6.7	8.4	0.0	0.0	-103.1
8/5/2012	787.8	2.7	0.0	14.8	2.9	0.0	756.8	79.7	11.8	6.7	8.4	0.0	0.0	-55.1
8/6/2012	808.6	2.4	0.0	12.9	2.9	0.0	739.7	80.2	11.8	6.7	8.4	0.0	0.0	-19.8
8/7/2012	920.1	3.0	0.0	13.0	2.9	0.0	785.1	86.0	11.8	6.7	8.4	0.0	0.0	41.1
8/8/2012	1085.9	0.9	0.0	28.5	2.9	0.0	937.5	96.1	11.8	6.7	8.4	0.0	0.0	57.9
8/9/2012	1131.5	3.2	0.0	38.6	2.9	0.0	1080.1	101.0	11.8	6.7	8.4	0.0	0.0	-31.7
8/10/2012	1104.2	2.3	0.0	26.2	2.9	0.0	1053.1	99.5	11.8	6.7	8.4	0.0	0.0	-43.8
8/11/2012	1205.8	3.2	0.0	19.3	2.9	0.0	1077.8	103.5	11.8	6.7	8.4	0.0	0.0	23.1
8/12/2012	1447.4	4.2	0.0	43.4	2.9	0.0	1275.6	115.7	11.8	6.7	8.4	0.0	0.0	79.8
8/13/2012	1522.0	2.8	0.0	43.0	2.9	0.0	1451.4	121.6	11.8	6.7	8.4	0.0	0.0	-29.1
8/14/2012	1460.0	6.8	0.0	41.5	2.9	0.0	1428.0	119.2	11.8	6.7	8.4	0.0	0.0	-62.9
8/15/2012	1334.8	4.3	0.0	38.7	2.9	0.0	1344.7	113.5	11.8	6.7	8.4	0.0	0.0	-104.2
8/16/2012	1471.8	1.6	0.0	61.8	2.9	0.0	1373.1	118.3	11.8	6.7	8.4	0.0	0.0	19.9
8/17/2012	1280.2	2.9	0.0	68.0	2.9	0.0	1267.0	110.0	11.8	6.7	8.4	0.0	0.0	-49.9
8/18/2012	1236.5	2.1	0.0	61.3	2.9	0.0	1208.5	107.3	11.8	6.7	8.4	0.0	0.0	-39.8
8/19/2012	1225.7	2.2	0.0	58.3	2.9	0.0	1193.6	106.7	11.8	6.7	8.4	0.0	0.0	-38.0
8/20/2012	1219.2	5.3	0.0	61.7	2.9	0.0	1187.8	106.3	11.8	6.7	8.4	0.0	0.0	-31.8
8/21/2012	1279.5	1.1	0.0	62.4	2.9	0.0	1220.7	109.0	11.8	6.7	8.4	0.0	0.0	-10.5

Table F1-3: RGCP Channel Water Budget Equation Analysis Segment 3

2010-12 Study Period

(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	MODFLOW Floodplain Recharge	Open Water Channel Evaporation	MODFLOW Riparian Evapo-transpiration	Diversions Authorized (None)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
8/22/2012	1324.3	4.5	0.0	65.1	2.9	0.0	1270.8	111.5	11.8	6.7	8.4	0.0	0.0	-12.2
8/23/2012	1284.6	3.2	0.0	58.2	2.9	0.0	1263.9	110.1	11.8	6.7	8.4	0.0	0.0	-52.0
8/24/2012	1200.6	2.3	0.0	64.9	2.9	0.0	1226.6	106.6	11.8	6.7	8.4	0.0	0.0	-89.3
8/25/2012	1038.0	3.7	0.0	49.6	2.9	0.0	1076.1	97.7	11.8	6.7	8.4	0.0	0.0	-106.4
8/26/2012	950.1	1.8	0.0	32.4	2.9	0.0	914.3	90.0	11.8	6.7	8.4	0.0	0.0	-44.0
8/27/2012	958.9	3.7	0.0	34.6	2.9	0.0	910.0	90.7	11.8	6.7	8.4	0.0	0.0	-27.4
8/28/2012	894.9	1.8	0.0	29.3	2.9	0.0	879.1	87.4	11.8	6.7	8.4	0.0	0.0	-64.4
8/29/2012	857.8	0.8	0.0	28.2	2.9	0.0	835.4	84.9	11.8	6.7	8.4	0.0	0.0	-57.4
8/30/2012	784.3	3.1	0.0	20.9	2.9	0.0	771.4	79.9	11.8	6.7	8.4	0.0	0.0	-66.9
8/31/2012	758.3	2.4	0.0	17.2	2.9	0.0	713.8	77.1	11.8	6.7	8.4	0.0	0.0	-36.9
9/1/2012	775.5	0.6	0.0	17.2	2.9	0.0	714.7	78.0	11.8	5.4	8.4	0.0	0.0	-21.9
9/2/2012	787.0	3.1	0.0	16.6	2.9	0.0	727.3	78.8	11.8	5.4	8.4	0.0	0.0	-22.1
9/3/2012	796.2	1.8	0.0	16.7	2.9	0.0	737.2	79.5	11.8	5.4	8.4	0.0	0.0	-24.6
9/4/2012	810.4	3.1	0.0	17.1	2.9	0.0	767.5	81.4	11.8	5.4	8.4	0.0	0.0	-40.9
9/5/2012	892.9	2.6	0.0	20.6	2.9	0.0	788.3	84.9	11.8	5.4	8.4	0.0	0.0	20.4
9/6/2012	909.1	3.4	0.0	24.8	2.9	0.0	842.6	86.9	11.8	5.4	8.4	0.0	0.0	-14.8
9/7/2012	892.6	3.6	0.0	23.6	2.9	0.0	849.3	86.6	11.8	5.4	8.4	0.0	0.0	-38.7
9/8/2012	677.7	1.3	43.8	33.4	2.9	0.0	757.9	75.1	11.8	5.4	8.4	0.0	0.0	-99.3
9/9/2012	507.5	1.3	37.8	43.5	2.9	0.0	591.6	61.4	11.8	5.4	8.4	0.0	0.0	-85.6
9/10/2012	278.3	1.6	138.6	28.2	2.9	0.0	448.1	42.4	11.8	5.4	8.4	0.0	0.0	-66.3
9/11/2012	224.8	2.0	4.1	24.3	2.9	0.0	256.1	29.8	11.8	5.4	8.4	0.0	0.0	-53.2
9/12/2012	538.8	3.7	0.0	20.3	2.9	0.0	247.8	48.6	11.8	5.4	8.4	0.0	0.0	244.0
9/13/2012	830.0	1.9	0.0	17.1	2.9	0.0	616.9	77.6	11.8	5.4	8.4	0.0	0.0	131.8
9/14/2012	798.9	2.1	0.0	16.4	2.9	0.0	780.8	81.4	11.8	5.4	8.4	0.0	0.0	-67.5
9/15/2012	11.1	1.3	0.0	8.2	2.9	0.0	9.0	11.1	11.8	5.4	8.4	0.0	0.0	-22.1
9/16/2012	11.0	2.3	0.0	2.3	2.9	0.0	6.5	11.0	11.8	5.4	8.4	0.0	0.0	-24.5
9/17/2012	10.9	1.0	0.0	0.7	2.9	0.0	6.3	10.9	11.8	5.4	8.4	0.0	0.0	-27.2
9/18/2012	11.0	1.9	0.0	0.6	2.9	0.0	6.2	11.0	11.8	5.4	8.4	0.0	0.0	-26.3
9/19/2012	11.7	1.9	0.0	1.1	2.9	0.0	6.3	11.7	11.8	5.4	8.4	0.0	0.0	-25.9
9/20/2012	14.8	2.1	0.0	1.1	2.9	0.0	7.4	14.8	11.8	5.4	8.4	0.0	0.0	-26.8
9/21/2012	16.5	0.3	0.0	1.2	2.9	0.0	10.3	16.5	11.8	5.4	8.4	0.0	0.0	-31.4
9/22/2012	14.6	2.3	0.0	1.1	2.9	0.0	10.9	14.6	11.8	5.4	8.4	0.0	0.0	-30.1
9/23/2012	12.7	2.4	0.0	1.1	2.9	0.0	9.2	12.7	11.8	5.4	8.4	0.0	0.0	-28.3
9/24/2012	11.1	0.9	0.0	1.1	2.9	0.0	7.4	11.1	11.8	5.4	8.4	0.0	0.0	-28.1
9/25/2012	10.8	2.3	0.0	1.1	2.9	0.0	6.3	10.8	11.8	5.4	8.4	0.0	0.0	-25.4
9/26/2012	10.7	0.8	0.0	1.0	2.9	0.0	6.1	10.7	11.8	5.4	8.4	0.0	0.0	-26.9
9/27/2012	10.8	0.2	0.0	0.9	2.9	0.0	6.1	10.8	11.8	5.4	8.4	0.0	0.0	-27.6
9/28/2012	10.8	0.1	0.0	0.9	2.9	0.0	6.2	10.8	11.8	5.4	8.4	0.0	0.0	-27.7
9/29/2012	10.8	1.0	0.0	0.9	2.9	0.0	6.2	10.8	11.8	5.4	8.4	0.0	0.0	-26.9
9/30/2012	10.7	1.0	0.0	1.0	2.9	0.0	6.1	10.7	11.8	5.4	8.4	0.0	0.0	-26.6
10/1/2012	10.8	1.6	0.0	0.9	2.9	0.0	6.2	10.8	11.8	0.0	8.4	0.0	0.0	-20.8
10/2/2012	10.8	0.4	0.0	1.0	2.9	0.0	6.1	10.8	11.8	0.0	8.4	0.0	0.0	-21.9
10/3/2012	10.8	1.2	0.0	1.1	2.9	0.0	6.1	10.8	11.8	0.0	8.4	0.0	0.0	-21.0
10/4/2012	10.7	1.3	0.0	1.1	2.9	0.0	6.2	10.7	11.8	0.0	8.4	0.0	0.0	-21.1
10/5/2012	10.7	1.1	0.0	1.1	2.9	0.0	6.1	10.7	11.8	0.0	8.4	0.0	0.0	-21.1
10/6/2012	10.7	0.3	0.0	1.0	2.9	0.0	6.1	10.7	11.8	0.0	8.4	0.0	0.0	-22.0
10/7/2012	10.8	0.3	0.0	1.1	2.9	0.0	6.1	10.8	11.8	0.0	8.4	0.0	0.0	-22.0
10/8/2012	10.7	0.7	0.0	1.0	2.9	0.0	6.1	10.7	11.8	0.0	8.4	0.0	0.0	-21.7
10/9/2012	10.7	0.8	0.0	1.1	2.9	0.0	6.1	10.7	11.8	0.0	8.4	0.0	0.0	-21.5
10/10/2012	10.7	0.5	0.0	1.0	2.9	0.0	6.1	10.7	11.8	0.0	8.4	0.0	0.0	-21.8
10/11/2012	10.7	1.7	0.0	1.0	2.9	0.0	6.0	10.7	11.8	0.0	8.4	0.0	0.0	-20.5

Table F1-3: RGCP Channel Water Budget Equation Analysis Segment 3

2010-12 Study Period

(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
	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	MODFLOW Floodplain Recharge	Open Water Channel Evaporation	MODFLOW Riparian Evapo- transpiration	Diversions Authorized (None)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
Date														
10/12/2012	10.7	0.4	0.0	1.0	2.9	0.0	6.1	10.7	11.8	0.0	8.4	0.0	0.0	-22.0
10/13/2012	10.7	1.1	0.0	1.0	2.9	0.0	6.2	10.7	11.8	0.0	8.4	0.0	0.0	-21.3
10/14/2012	10.7	0.7	0.0	1.0	2.9	0.0	6.1	10.7	11.8	0.0	8.4	0.0	0.0	-21.6
10/15/2012	10.7	1.3	0.0	1.1	2.9	0.0	6.1	10.7	11.8	0.0	8.4	0.0	0.0	-21.0
10/16/2012	10.7	0.3	0.0	1.1	2.9	0.0	6.1	10.7	11.8	0.0	8.4	0.0	0.0	-21.9
10/17/2012	10.8	3.2	0.0	1.1	2.9	0.0	6.1	10.8	11.8	0.0	8.4	0.0	0.0	-19.1
10/18/2012	10.7	0.9	0.0	1.1	2.9	0.0	6.1	10.7	11.8	0.0	8.4	0.0	0.0	-21.3
10/19/2012	10.8	2.0	0.0	0.0	2.9	0.0	6.1	10.8	11.8	0.0	8.4	0.0	0.0	-21.3
10/20/2012	10.7	2.4	0.0	0.0	2.9	0.0	6.1	10.7	11.8	0.0	8.4	0.0	0.0	-20.9
10/21/2012	10.8	1.8	0.0	0.0	2.9	0.0	6.0	10.8	11.8	0.0	8.4	0.0	0.0	-21.5
10/22/2012	10.7	1.7	0.0	1.0	2.9	0.0	6.1	10.7	11.8	0.0	8.4	0.0	0.0	-20.7
10/23/2012	10.6	1.7	0.0	1.1	2.9	0.0	6.1	10.6	11.8	0.0	8.4	0.0	0.0	-20.6
10/24/2012	10.8	1.8	0.0	1.1	2.9	0.0	6.2	10.8	11.8	0.0	8.4	0.0	0.0	-20.5
10/25/2012	10.7	1.0	0.0	1.1	2.9	0.0	6.1	10.7	11.8	0.0	8.4	0.0	0.0	-21.3
10/26/2012	10.7	1.8	0.0	1.0	2.9	0.0	6.1	10.7	11.8	0.0	8.4	0.0	0.0	-20.6
10/27/2012	10.7	1.4	0.0	1.0	2.9	0.0	6.1	10.7	11.8	0.0	8.4	0.0	0.0	-20.9
10/28/2012	10.8	2.0	0.0	1.1	2.9	0.0	6.1	10.8	11.8	0.0	8.4	0.0	0.0	-20.3
10/29/2012	10.8	0.9	0.0	1.1	2.9	0.0	6.3	10.8	11.8	0.0	8.4	0.0	0.0	-21.6
10/30/2012	10.6	0.7	0.0	1.1	2.9	0.0	6.2	10.6	11.8	0.0	8.4	0.0	0.0	-21.6
10/31/2012	10.8	0.4	0.0	1.1	2.9	0.0	6.2	10.8	11.8	0.0	8.4	0.0	0.0	-21.9
11/1/2012	10.8	1.2	0.0	0.0	2.9	0.1	6.3	10.8	0.1	0.0	2.9	0.0	0.0	-5.1
11/2/2012	10.8	0.3	0.0	0.0	2.9	0.1	6.3	10.8	0.1	0.0	2.9	0.0	0.0	-6.0
11/3/2012	10.8	1.2	0.0	0.0	2.9	0.1	6.3	10.8	0.1	0.0	2.9	0.0	0.0	-5.2
11/4/2012	10.9	0.3	0.0	0.0	2.9	0.1	6.5	10.9	0.1	0.0	2.9	0.0	0.0	-6.2
11/5/2012	11.0	1.5	0.0	0.0	2.9	0.1	6.6	11.0	0.1	0.0	2.9	0.0	0.0	-5.1
11/6/2012	11.1	0.3	0.0	0.0	2.9	0.1	6.7	11.1	0.1	0.0	2.9	0.0	0.0	-6.5
11/7/2012	11.1	1.0	0.0	0.0	2.9	0.1	6.8	11.1	0.1	0.0	2.9	0.0	0.0	-5.9
11/8/2012	11.2	0.9	0.0	0.0	2.9	0.1	6.8	11.2	0.1	0.0	2.9	0.0	0.0	-6.0
11/9/2012	11.3	0.5	0.0	0.0	2.9	0.1	7.0	11.3	0.1	0.0	2.9	0.0	0.0	-6.5
11/10/2012	11.3	0.1	0.0	0.0	2.9	0.1	7.1	11.3	0.1	0.0	2.9	0.0	0.0	-7.0
11/11/2012	11.4	0.8	0.0	0.0	2.9	0.1	7.1	11.4	0.1	0.0	2.9	0.0	0.0	-6.4
11/12/2012	11.7	0.5	0.0	0.0	2.9	0.1	7.2	11.7	0.1	0.0	2.9	0.0	0.0	-6.8
11/13/2012	11.7	0.7	0.0	0.0	2.9	0.1	7.4	11.7	0.1	0.0	2.9	0.0	0.0	-6.7
11/14/2012	11.8	3.2	0.0	0.0	2.9	0.1	7.5	11.8	0.1	0.0	2.9	0.0	0.0	-4.4
11/15/2012	11.9	0.6	0.0	0.0	2.9	0.1	7.5	11.9	0.1	0.0	2.9	0.0	0.0	-7.0
11/16/2012	11.8	1.0	0.0	0.0	2.9	0.1	7.7	11.8	0.1	0.0	2.9	0.0	0.0	-6.7
11/17/2012	11.7	0.1	0.0	0.0	2.9	0.1	7.7	11.7	0.1	0.0	2.9	0.0	0.0	-7.6
11/18/2012	11.9	0.1	0.0	0.0	2.9	0.1	7.6	11.9	0.1	0.0	2.9	0.0	0.0	-7.5
11/19/2012	11.7	0.5	0.0	0.0	2.9	0.1	7.5	11.7	0.1	0.0	2.9	0.0	0.0	-7.1
11/20/2012	11.8	0.0	0.0	0.0	2.9	0.1	7.5	11.8	0.1	0.0	2.9	0.0	0.0	-7.5
11/21/2012	11.8	0.1	0.0	0.0	2.9	0.1	7.6	11.8	0.1	0.0	2.9	0.0	0.0	-7.5
11/22/2012	11.9	0.2	0.0	0.0	2.9	0.1	7.6	11.9	0.1	0.0	2.9	0.0	0.0	-7.5
11/23/2012	11.9	0.2	0.0	0.0	2.9	0.1	7.6	11.9	0.1	0.0	2.9	0.0	0.0	-7.4
11/24/2012	11.9	0.6	0.0	0.0	2.9	0.1	7.7	11.9	0.1	0.0	2.9	0.0	0.0	-7.1
11/25/2012	11.9	0.0	0.0	0.0	2.9	0.1	7.7	11.9	0.1	0.0	2.9	0.0	0.0	-7.7
11/26/2012	11.9	0.4	0.0	0.0	2.9	0.1	7.8	11.9	0.1	0.0	2.9	0.0	0.0	-7.4
11/27/2012	11.9	1.4	0.0	0.0	2.9	0.1	7.7	11.9	0.1	0.0	2.9	0.0	0.0	-6.3
11/28/2012	11.9	0.9	0.0	0.0	2.9	0.1	7.8	11.9	0.1	0.0	2.9	0.0	0.0	-6.9
11/29/2012	11.9	0.7	0.0	0.0	2.9	0.1	7.8	11.9	0.1	0.0	2.9	0.0	0.0	-7.1
11/30/2012	11.9	0.3	0.0	0.0	2.9	0.1	7.8	11.9	0.1	0.0	2.9	0.0	0.0	-7.5

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

$$\Delta S_{ic} = (Q_{us} + P_c + Q_{cin} + Q_{irf} + Q_{gwrf}) - (Q_{cds} + Q_{cs} + Q_{fpr} + ET + Q_{da} + Q_{du})$$

- Sum of Inflow
- Sum of Outflow
- $\Delta S_{ic}$  - Change in Channel Storage

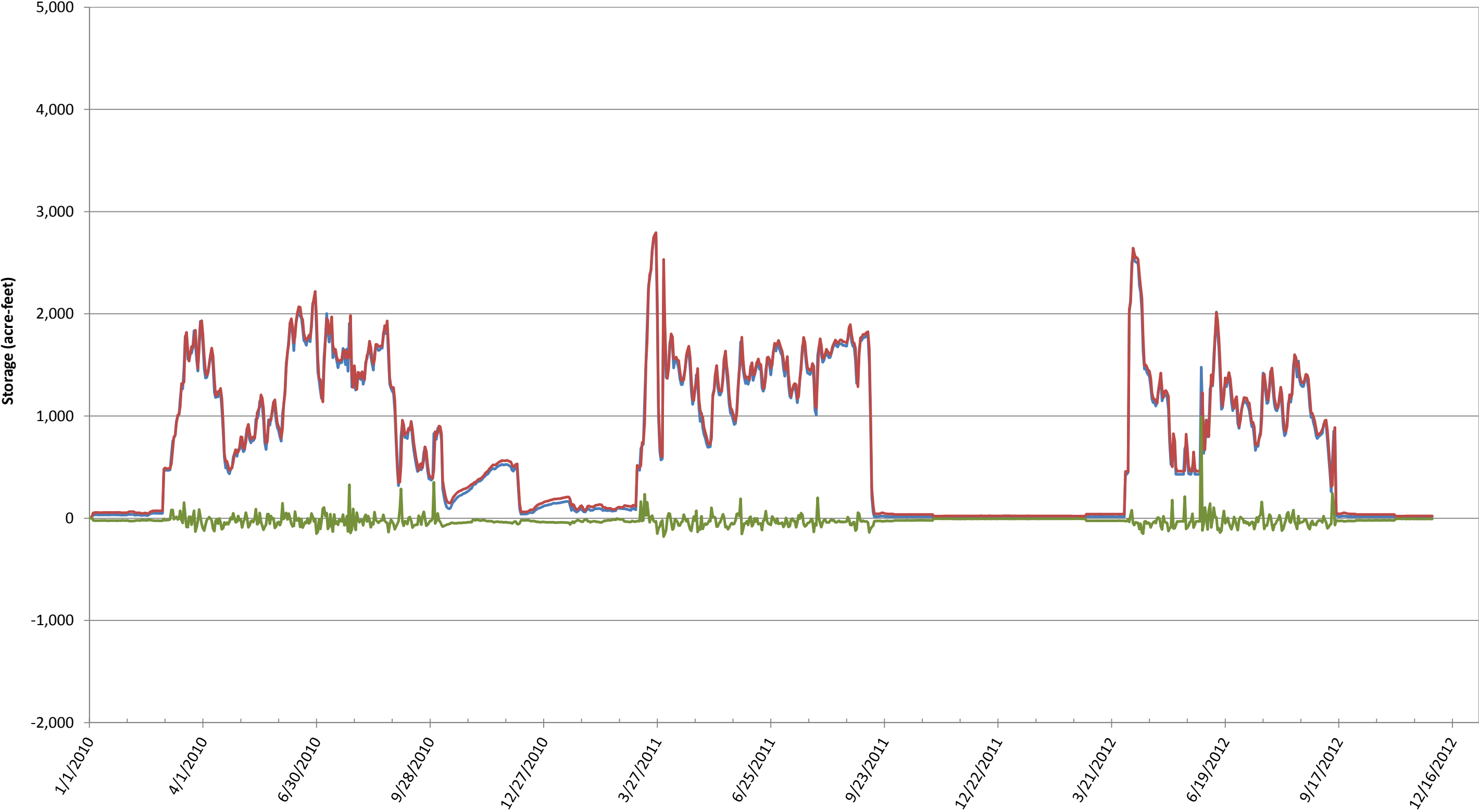


Table F1-4: RGCP Channel Water Budget Equation Analysis Segment 42010-12 Study Period(Units - Acre-Feet)

	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, above American Dam	Channel Seepage	MODFLOW Floodplain Recharge	Open Water Channel Evaporation	MODFLOW Riparian Evapo-transpiration	Diversions Authorized (None)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
1/1/2010	0.0	0.3	0.0	173.0	33.0	0.8	0.0	0.0	0.1	0.0	2.5	0.0	0.0	204.5
1/2/2010	0.0	0.9	0.0	179.7	33.0	0.8	0.0	0.0	0.1	0.0	2.5	0.0	0.0	211.7
1/3/2010	0.0	0.5	0.0	178.4	33.0	0.8	10.0	0.0	0.1	0.0	2.5	0.0	0.0	200.1
1/4/2010	20.9	0.6	0.0	180.7	33.0	0.8	137.0	20.9	0.1	0.0	2.5	0.0	0.0	75.5
1/5/2010	23.6	0.3	0.0	180.8	33.0	0.8	207.0	23.6	0.1	0.0	2.5	0.0	0.0	5.3
1/6/2010	24.1	0.9	0.0	183.3	33.0	0.8	208.1	24.1	0.1	0.0	2.5	0.0	0.0	7.2
1/7/2010	24.0	0.5	0.0	183.5	33.0	0.8	209.3	24.0	0.1	0.0	2.5	0.0	0.0	5.9
1/8/2010	24.0	0.8	0.0	183.8	33.0	0.8	209.5	24.0	0.1	0.0	2.5	0.0	0.0	6.3
1/9/2010	23.9	0.4	0.0	185.6	33.0	0.8	210.6	23.9	0.1	0.0	2.5	0.0	0.0	6.7
1/10/2010	23.7	0.6	0.0	185.8	33.0	0.8	211.3	23.7	0.1	0.0	2.5	0.0	0.0	6.4
1/11/2010	23.7	0.9	0.0	180.6	33.0	0.8	208.1	23.7	0.1	0.0	2.5	0.0	0.0	4.5
1/12/2010	23.8	0.9	0.0	177.1	33.0	0.8	204.4	23.8	0.1	0.0	2.5	0.0	0.0	4.8
1/13/2010	24.0	0.8	0.0	180.1	33.0	0.8	205.3	24.0	0.1	0.0	2.5	0.0	0.0	6.7
1/14/2010	24.3	0.5	0.0	184.1	33.0	0.8	209.0	24.3	0.1	0.0	2.5	0.0	0.0	6.8
1/15/2010	24.5	0.4	0.0	183.2	33.0	0.8	209.8	24.5	0.1	0.0	2.5	0.0	0.0	5.0
1/16/2010	24.6	0.3	0.0	182.4	33.0	0.8	209.2	24.6	0.1	0.0	2.5	0.0	0.0	4.7
1/17/2010	24.4	1.4	0.0	183.5	33.0	0.8	209.7	24.4	0.1	0.0	2.5	0.0	0.0	6.5
1/18/2010	24.5	1.6	0.0	182.3	33.0	0.8	209.2	24.5	0.1	0.0	2.5	0.0	0.0	5.8
1/19/2010	24.5	0.9	0.0	165.7	33.0	0.8	197.7	24.5	0.1	0.0	2.5	0.0	0.0	0.1
1/20/2010	24.5	0.8	0.0	179.9	33.0	0.8	202.2	24.5	0.1	0.0	2.5	0.0	0.0	9.6
1/21/2010	24.5	0.8	0.0	185.7	33.0	0.8	210.3	24.5	0.1	0.0	2.5	0.0	0.0	7.3
1/22/2010	24.5	0.5	0.0	187.4	33.0	0.8	213.0	24.5	0.1	0.0	2.5	0.0	0.0	6.1
1/23/2010	24.5	0.7	0.0	198.3	33.0	0.8	220.4	24.5	0.1	0.0	2.5	0.0	0.0	9.7
1/24/2010	24.8	0.8	0.0	188.9	33.0	0.8	217.8	24.8	0.1	0.0	2.5	0.0	0.0	3.1
1/25/2010	24.5	0.9	0.0	188.0	33.0	0.8	214.8	24.5	0.1	0.0	2.5	0.0	0.0	5.2
1/26/2010	23.7	0.9	0.0	186.3	33.0	0.8	212.9	23.7	0.1	0.0	2.5	0.0	0.0	5.4
1/27/2010	22.9	0.3	0.0	187.4	33.0	0.8	212.5	22.9	0.1	0.0	2.5	0.0	0.0	6.4
1/28/2010	22.6	0.5	0.0	194.5	33.0	0.8	216.7	22.6	0.1	0.0	2.5	0.0	0.0	9.6
1/29/2010	23.1	0.2	0.0	195.9	33.0	0.8	219.7	23.1	0.1	0.0	2.5	0.0	0.0	7.5
1/30/2010	23.4	0.5	23.5	29.6	33.0	0.8	109.6	23.4	0.1	0.0	2.5	0.0	0.0	-24.7
1/31/2010	22.6	1.0	0.0	28.6	33.0	0.8	60.5	22.6	0.1	0.0	2.5	0.0	0.0	0.3
2/1/2010	25.9	0.3	0.0	28.3	33.0	0.8	58.9	25.9	0.1	0.0	2.5	0.0	0.0	0.9
2/2/2010	27.8	1.3	0.0	27.9	33.0	0.8	62.4	27.8	0.1	0.0	2.5	0.0	0.0	-2.1
2/3/2010	27.9	1.3	0.0	29.1	33.0	0.8	63.9	27.9	0.1	0.0	2.5	0.0	0.0	-2.4
2/4/2010	28.3	1.5	0.0	32.3	33.0	0.8	66.7	28.3	0.1	0.0	2.5	0.0	0.0	-1.7
2/5/2010	28.6	1.9	0.0	33.1	33.0	0.8	68.3	28.6	0.1	0.0	2.5	0.0	0.0	-2.1
2/6/2010	27.4	0.3	0.0	33.1	33.0	0.8	69.0	27.4	0.1	0.0	2.5	0.0	0.0	-4.5
2/7/2010	21.8	0.5	0.0	34.0	33.0	0.8	67.6	21.8	0.1	0.0	2.5	0.0	0.0	-1.9
2/8/2010	22.9	1.3	0.0	196.4	33.0	0.8	173.2	22.9	0.1	0.0	2.5	0.0	0.0	55.7
2/9/2010	22.9	0.5	0.0	175.8	33.0	0.8	207.1	22.9	0.1	0.0	2.5	0.0	0.0	0.3
2/10/2010	22.9	1.3	0.0	174.0	33.0	0.8	199.9	22.9	0.1	0.0	2.5	0.0	0.0	6.6
2/11/2010	21.2	1.0	0.0	178.5	33.0	0.8	201.7	21.2	0.1	0.0	2.5	0.0	0.0	9.0
2/12/2010	19.8	1.1	0.0	175.0	33.0	0.8	199.1	19.8	0.1	0.0	2.5	0.0	0.0	8.2
2/13/2010	20.1	1.0	0.0	180.1	33.0	0.8	200.9	20.1	0.1	0.0	2.5	0.0	0.0	11.4
2/14/2010	21.0	0.9	0.0	182.4	33.0	0.8	204.2	21.0	0.1	0.0	2.5	0.0	0.0	10.3
2/15/2010	22.5	0.9	32.7	0.0	33.0	0.8	88.2	49.2	0.1	0.0	2.5	0.0	0.0	-50.1



Table F1-4: RGCP Channel Water Budget Equation Analysis Segment 4														
2010-12 Study Period														
(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
	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, above American Dam	Channel Seepage	MODFLOW Floodplain Recharge	Open Water Channel Evaporation	MODFLOW Riparian Evapo-transpiration	Diversions Authorized (None)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
Date														
2/16/2010	18.5	1.0	0.0	186.6	33.0	0.8	153.2	18.5	0.1	0.0	2.5	0.0	0.0	65.5
2/17/2010	18.9	0.4	0.0	186.9	33.0	0.8	206.7	18.9	0.1	0.0	2.5	0.0	0.0	11.7
2/18/2010	30.0	0.5	0.0	180.7	33.0	0.8	205.2	30.0	0.1	0.0	2.5	0.0	0.0	7.3
2/19/2010	35.5	0.3	0.0	150.8	33.0	0.8	193.7	35.5	0.1	0.0	2.5	0.0	0.0	-11.5
2/20/2010	36.9	1.8	0.0	175.5	33.0	0.8	204.2	36.9	0.1	0.0	2.5	0.0	0.0	4.3
2/21/2010	38.5	0.7	0.0	179.0	33.0	0.8	215.9	38.5	0.1	0.0	2.5	0.0	0.0	-5.0
2/22/2010	38.9	0.5	0.0	183.9	33.0	0.8	221.4	38.9	0.1	0.0	2.5	0.0	0.0	-5.7
2/23/2010	38.8	0.5	0.0	185.1	33.0	0.8	224.7	38.8	0.1	0.0	2.5	0.0	0.0	-7.9
2/24/2010	38.6	0.6	0.0	188.8	33.0	0.8	226.8	38.6	0.1	0.0	2.5	0.0	0.0	-6.2
2/25/2010	38.5	0.6	0.0	195.3	33.0	0.8	232.0	38.5	0.1	0.0	2.5	0.0	0.0	-4.9
2/26/2010	38.1	0.3	0.0	197.5	33.0	0.8	235.3	38.1	0.1	0.0	2.5	0.0	0.0	-6.3
2/27/2010	38.1	0.3	0.0	199.7	33.0	0.8	237.0	38.1	0.1	0.0	2.5	0.0	0.0	-5.8
2/28/2010	38.4	0.9	0.0	205.5	33.0	0.8	241.6	38.4	0.1	0.0	2.5	0.0	0.0	-4.0
3/1/2010	415.2	1.0	0.0	204.3	33.0	0.0	562.1	58.0	6.4	2.6	7.2	0.0	0.0	17.2
3/2/2010	425.9	0.6	0.0	203.5	33.0	0.0	561.1	58.5	6.4	2.6	7.2	0.0	0.0	27.2
3/3/2010	421.7	0.4	0.0	203.6	33.0	0.0	570.4	58.9	6.4	2.6	7.2	0.0	0.0	13.2
3/4/2010	420.9	0.1	0.0	201.9	33.0	0.0	565.3	58.5	6.4	2.6	7.2	0.0	0.0	15.8
3/5/2010	421.1	0.5	0.0	200.8	33.0	0.0	563.5	58.5	6.4	2.6	7.2	0.0	0.0	17.3
3/6/2010	421.5	0.8	0.0	199.8	33.0	0.0	563.0	58.5	6.4	2.6	7.2	0.0	0.0	17.4
3/7/2010	457.0	0.3	0.0	200.8	33.0	0.0	563.7	59.2	6.4	2.6	7.2	0.0	0.0	52.0
3/8/2010	585.7	0.4	0.0	201.8	33.0	0.0	626.5	71.5	6.4	2.6	7.2	0.0	0.0	106.7
3/9/2010	701.2	0.3	0.0	200.9	33.0	0.0	748.6	83.5	6.4	2.6	7.2	0.0	0.0	87.1
3/10/2010	718.2	1.3	0.0	203.2	33.0	0.0	820.6	86.5	6.4	2.6	7.2	0.0	0.0	32.5
3/11/2010	827.7	0.9	0.0	183.1	33.0	0.0	827.0	90.6	6.4	2.6	7.2	0.0	0.0	110.9
3/12/2010	901.4	1.2	0.0	185.0	33.0	0.0	951.7	98.9	6.4	2.6	7.2	0.0	0.0	53.8
3/13/2010	912.2	0.1	0.0	192.1	33.0	0.0	1001.7	101.4	6.4	2.6	7.2	0.0	0.0	18.1
3/14/2010	977.7	0.7	0.0	197.8	33.0	0.0	1024.8	104.5	6.4	2.6	7.2	0.0	0.0	63.7
3/15/2010	1194.7	0.7	0.0	199.5	33.0	0.0	1180.0	117.7	6.4	2.6	7.2	0.0	0.0	114.0
3/16/2010	1189.4	0.1	0.0	197.4	33.0	0.0	1275.9	120.2	6.4	2.6	7.2	0.0	0.0	7.7
3/17/2010	1204.7	0.5	0.0	195.2	33.0	0.0	1249.8	118.9	6.4	2.6	7.2	0.0	0.0	48.6
3/18/2010	1607.5	0.4	0.0	198.5	33.0	0.0	1526.8	140.1	6.4	2.6	7.2	0.0	0.0	156.4
3/19/2010	1673.1	0.5	0.0	198.0	33.0	0.0	1740.6	147.8	6.4	2.6	7.2	0.0	0.0	0.1
3/20/2010	1505.8	0.8	0.0	181.5	33.0	0.0	1620.7	139.6	6.4	2.6	7.2	0.0	0.0	-55.3
3/21/2010	1401.5	0.1	0.0	175.2	33.0	0.0	1466.4	131.7	6.4	2.6	7.2	0.0	0.0	-4.5
3/22/2010	1471.5	0.3	0.0	175.0	33.0	0.0	1491.0	134.7	6.4	2.6	7.2	0.0	0.0	38.0
3/23/2010	1539.5	0.1	0.0	166.1	33.0	0.0	1563.7	139.5	6.4	2.6	7.2	0.0	0.0	19.3
3/24/2010	1527.1	0.3	0.0	144.1	33.0	0.0	1503.9	136.6	6.4	2.6	7.2	0.0	0.0	47.9
3/25/2010	1614.1	0.2	0.0	158.2	33.0	0.0	1578.4	140.9	6.4	2.6	7.2	0.0	0.0	70.0
3/26/2010	1693.6	0.6	0.0	165.4	33.0	0.0	1781.0	149.9	6.4	2.6	7.2	0.0	0.0	-54.5
3/27/2010	1489.0	0.5	0.0	176.9	33.0	0.0	1586.8	138.4	6.4	2.6	7.2	0.0	0.0	-42.0
3/28/2010	1332.5	0.2	0.0	0.0	33.0	0.0	1289.4	125.1	6.4	2.6	7.2	0.0	0.0	-65.0
3/29/2010	1520.9	0.2	0.0	191.2	33.0	0.0	1412.6	134.2	6.4	2.6	7.2	0.0	0.0	182.2
3/30/2010	1756.8	0.3	0.0	205.7	33.0	0.0	1740.7	149.7	6.4	2.6	7.2	0.0	0.0	89.2
3/31/2010	1779.7	0.1	0.0	178.3	33.0	0.0	1834.1	153.0	6.4	2.6	7.2	0.0	0.0	-12.1
4/1/2010	1653.9	0.2	0.0	169.2	33.0	0.0	1744.0	147.4	6.4	5.6	7.2	0.0	0.0	-54.2
4/2/2010	1447.1	0.2	0.0	196.8	33.0	0.0	1599.2	137.5	6.4	5.6	7.2	0.0	0.0	-78.9
4/3/2010	1302.3	0.1	0.0	203.0	33.0	0.0	1414.0	128.0	6.4	5.6	7.2	0.0	0.0	-22.8
4/4/2010	1264.5	0.3	0.0	244.7	33.0	0.0	1373.9	125.3	6.4	5.6	7.2	0.0	0.0	24.0
4/5/2010	1294.8	0.9	0.0	232.1	33.0	0.0	1384.2	126.5	6.4	5.6	7.2	0.0	0.0	30.8
4/6/2010	1364.2	0.6	0.0	225.8	33.0	0.0	1425.1	129.5	6.4	5.6	7.2	0.0	0.0	49.7
4/7/2010	1457.4	0.3	0.0	218.1	33.0	0.0	1511.2	133.3	6.4	5.6	7.2	0.0	0.0	45.0

Table F1-4: RGCP Channel Water Budget Equation Analysis Segment 4

2010-12 Study Period

(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
	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, above American Dam	Channel Seepage	MODFLOW Floodplain Recharge	Open Water Channel Evaporation	MODFLOW Riparian Evapo- transpiration	Diversions Authorized (None)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
Date														
4/8/2010	1519.8	0.0	0.0	218.5	33.0	0.0	1582.3	136.8	6.4	5.6	7.2	0.0	0.0	32.9
4/9/2010	1451.1	0.0	0.0	200.0	33.0	0.0	1583.1	135.1	6.4	5.6	7.2	0.0	0.0	-53.3
4/10/2010	1236.2	0.4	0.0	209.5	33.0	0.0	1432.5	124.7	6.4	5.6	7.2	0.0	0.0	-97.3
4/11/2010	1086.8	1.0	0.0	228.1	33.0	0.0	1221.9	112.8	6.4	5.6	7.2	0.0	0.0	-5.1
4/12/2010	1075.2	0.3	0.0	209.2	33.0	0.0	1183.1	113.4	6.4	5.6	7.2	0.0	0.0	2.0
4/13/2010	1116.9	0.2	0.0	225.3	33.0	0.0	1207.2	116.4	6.4	5.6	7.2	0.0	0.0	32.6
4/14/2010	1117.1	0.7	0.0	241.4	33.0	0.0	1215.8	116.5	6.4	5.6	7.2	0.0	0.0	40.6
4/15/2010	1145.4	0.2	0.0	243.8	33.0	0.0	1274.2	119.2	6.4	5.6	7.2	0.0	0.0	9.8
4/16/2010	1052.9	0.1	0.0	223.8	33.0	0.0	1234.0	114.9	6.4	5.6	7.2	0.0	0.0	-58.4
4/17/2010	833.8	0.2	11.6	206.4	33.0	0.0	1084.8	102.5	6.4	5.6	7.2	0.0	0.0	-121.6
4/18/2010	551.2	0.1	35.0	219.4	33.0	0.0	838.5	79.2	6.4	5.6	7.2	0.0	0.0	-98.4
4/19/2010	479.2	0.2	0.0	198.5	33.0	0.0	669.0	69.1	6.4	5.6	7.2	0.0	0.0	-46.5
4/20/2010	479.7	0.2	0.0	113.9	33.0	0.0	539.5	58.8	6.4	5.6	7.2	0.0	0.0	9.3
4/21/2010	441.4	0.6	0.0	58.8	33.0	0.0	509.6	59.4	6.4	5.6	7.2	0.0	0.0	-54.4
4/22/2010	402.8	0.5	0.0	46.9	33.0	0.0	426.1	51.6	6.4	5.6	7.2	0.0	0.0	-13.8
4/23/2010	402.6	1.1	0.0	47.0	33.0	0.0	391.8	49.3	6.4	5.6	7.2	0.0	0.0	23.3
4/24/2010	427.5	1.3	0.0	74.9	33.0	0.0	431.6	54.8	6.4	5.6	7.2	0.0	0.0	31.0
4/25/2010	464.1	0.1	0.0	60.7	33.0	0.0	435.4	54.5	6.4	5.6	7.2	0.0	0.0	48.7
4/26/2010	548.2	0.2	0.0	104.0	33.0	0.0	512.6	65.7	6.4	5.6	7.2	0.0	0.0	87.7
4/27/2010	581.8	0.1	0.0	78.1	33.0	0.0	573.4	69.5	6.4	5.6	7.2	0.0	0.0	30.8
4/28/2010	554.1	0.4	0.0	59.4	33.0	0.0	576.2	68.7	6.4	5.6	7.2	0.0	0.0	-17.3
4/29/2010	559.0	0.2	0.0	50.1	33.0	0.0	534.5	66.4	6.4	5.6	7.2	0.0	0.0	22.2
4/30/2010	601.2	0.2	0.0	49.0	33.0	0.0	556.4	71.1	6.4	5.6	7.2	0.0	0.0	36.5
5/1/2010	693.1	0.6	0.0	44.3	33.0	0.0	572.6	73.5	6.4	8.8	7.2	0.0	0.0	102.4
5/2/2010	693.6	0.5	0.0	44.3	33.0	0.0	673.2	81.2	6.4	8.8	7.2	0.0	0.0	-5.5
5/3/2010	596.7	0.2	0.0	67.0	33.0	0.0	653.8	75.1	6.4	8.8	7.2	0.0	0.0	-54.5
5/4/2010	587.1	0.4	0.0	93.5	33.0	0.0	601.7	71.4	6.4	8.8	7.2	0.0	0.0	18.4
5/5/2010	645.8	0.3	0.0	132.4	33.0	0.0	637.1	75.1	6.4	8.8	7.2	0.0	0.0	76.8
5/6/2010	765.1	0.9	0.0	71.0	33.0	0.0	692.3	84.9	6.4	8.8	7.2	0.0	0.0	70.3
5/7/2010	810.8	0.1	0.0	110.8	33.0	0.0	802.3	91.6	6.4	8.8	7.2	0.0	0.0	38.4
5/8/2010	731.8	0.5	0.0	92.2	33.0	0.0	783.2	86.7	6.4	8.8	7.2	0.0	0.0	-34.9
5/9/2010	668.9	0.6	0.0	85.4	33.0	0.0	718.3	81.2	6.4	8.8	7.2	0.0	0.0	-34.1
5/10/2010	683.4	0.4	0.0	72.3	33.0	0.0	662.3	79.2	6.4	8.8	7.2	0.0	0.0	25.2
5/11/2010	695.4	0.2	0.0	58.2	33.0	0.0	671.9	80.5	6.4	8.8	7.2	0.0	0.0	11.9
5/12/2010	682.8	0.1	0.0	60.3	33.0	0.0	671.9	80.0	6.4	8.8	7.2	0.0	0.0	1.9
5/13/2010	768.3	0.2	0.0	54.0	33.0	0.0	671.8	83.2	6.4	8.8	7.2	0.0	0.0	78.1
5/14/2010	918.5	0.8	0.0	54.5	33.0	0.0	825.3	97.8	6.4	8.8	7.2	0.0	0.0	61.2
5/15/2010	947.4	0.8	0.0	57.8	33.0	0.0	857.6	98.8	6.4	8.8	7.2	0.0	0.0	60.1
5/16/2010	969.2	0.7	0.0	67.7	33.0	0.0	905.2	100.8	6.4	8.8	7.2	0.0	0.0	42.3
5/17/2010	1081.9	1.5	0.0	58.0	33.0	0.0	1005.8	109.3	6.4	8.8	7.2	0.0	0.0	36.8
5/18/2010	1055.4	1.0	0.0	59.5	33.0	0.0	1028.9	109.0	6.4	8.8	7.2	0.0	0.0	-11.5
5/19/2010	958.5	0.5	0.0	50.7	33.0	0.0	966.4	103.8	6.4	8.8	7.2	0.0	0.0	-49.9
5/20/2010	728.8	1.2	16.8	62.7	33.0	0.0	841.4	89.9	6.4	8.8	7.2	0.0	0.0	-111.2
5/21/2010	640.9	0.4	0.0	58.0	33.0	0.0	675.4	78.0	6.4	8.8	7.2	0.0	0.0	-43.5
5/22/2010	650.3	1.5	0.0	65.7	33.0	0.0	618.0	73.7	6.4	8.8	7.2	0.0	0.0	36.4
5/23/2010	810.7	1.1	0.0	83.6	33.0	0.0	675.7	85.5	6.4	8.8	7.2	0.0	0.0	144.7
5/24/2010	853.6	0.4	0.0	80.8	33.0	0.0	853.8	95.7	6.4	8.8	7.2	0.0	0.0	-4.2
5/25/2010	848.1	0.1	0.0	68.5	33.0	0.0	816.7	92.8	6.4	8.8	7.2	0.0	0.0	17.7
5/26/2010	938.4	0.5	0.0	65.2	33.0	0.0	864.8	98.8	6.4	8.8	7.2	0.0	0.0	51.0
5/27/2010	1014.6	1.3	0.0	76.4	33.0	0.0	933.9	104.5	6.4	8.8	7.2	0.0	0.0	64.5
5/28/2010	1039.3	0.2	0.0	61.5	33.0	0.0	1005.2	108.2	6.4	8.8	7.2	0.0	0.0	-2.0

Table F1-4: RGCP Channel Water Budget Equation Analysis Segment 4

2010-12 Study Period

(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, above American Dam	Channel Seepage	MODFLOW Floodplain Recharge	Open Water Channel Evaporation	MODFLOW Riparian Evapo-transpiration	Diversions Authorized (None)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
5/29/2010	916.4	0.4	0.0	63.3	33.0	0.0	936.9	100.9	6.4	8.8	7.2	0.0	0.0	-47.1
5/30/2010	820.9	0.5	0.0	70.5	33.0	0.0	848.6	93.8	6.4	8.8	7.2	0.0	0.0	-40.0
5/31/2010	786.4	0.5	0.0	69.1	33.0	0.0	791.5	90.1	6.4	8.8	7.2	0.0	0.0	-15.0
6/1/2010	767.9	1.2	0.0	62.3	33.0	0.0	755.1	87.9	6.4	9.1	7.2	0.0	0.0	-1.2
6/2/2010	687.7	1.3	0.0	78.6	33.0	0.0	734.1	83.4	6.4	9.1	7.2	0.0	0.0	-39.6
6/3/2010	766.1	0.6	0.0	64.5	33.0	0.0	673.7	82.0	6.4	9.1	7.2	0.0	0.0	85.8
6/4/2010	995.8	0.5	0.0	63.4	33.0	0.0	885.5	102.7	6.4	9.1	7.2	0.0	0.0	81.8
6/5/2010	1093.6	0.4	0.0	61.2	33.0	0.0	976.4	108.4	6.4	9.1	7.2	0.0	0.0	80.7
6/6/2010	1327.6	0.3	0.0	70.9	33.0	0.0	1147.1	121.9	6.4	9.1	7.2	0.0	0.0	140.1
6/7/2010	1487.0	0.8	0.0	74.9	33.0	0.0	1387.4	133.7	6.4	9.1	7.2	0.0	0.0	51.9
6/8/2010	1548.5	0.9	0.0	65.5	33.0	0.0	1434.9	136.0	6.4	9.1	7.2	0.0	0.0	54.2
6/9/2010	1751.3	0.6	0.0	66.5	33.0	0.0	1605.0	147.0	6.4	9.1	7.2	0.0	0.0	76.7
6/10/2010	1793.7	1.7	0.0	62.8	33.0	0.0	1718.6	151.1	6.4	9.1	7.2	0.0	0.0	-1.2
6/11/2010	1723.2	0.7	0.0	68.0	33.0	0.0	1681.3	148.3	6.4	9.1	7.2	0.0	0.0	-27.5
6/12/2010	1569.0	0.9	0.0	71.2	33.0	0.0	1560.4	140.5	6.4	9.1	7.2	0.0	0.0	-49.6
6/13/2010	1625.1	1.1	0.0	67.7	33.0	0.0	1473.0	139.2	6.4	9.1	7.2	0.0	0.0	92.0
6/14/2010	1788.5	1.0	0.0	58.5	33.0	0.0	1669.8	149.6	6.4	9.1	7.2	0.0	0.0	38.8
6/15/2010	1854.7	1.1	0.0	61.7	33.0	0.0	1729.0	152.9	6.4	9.1	7.2	0.0	0.0	45.8
6/16/2010	1904.7	1.6	0.0	59.5	33.0	0.0	1779.3	155.3	6.4	9.1	7.2	0.0	0.0	41.5
6/17/2010	1900.5	1.8	0.0	70.7	33.0	0.0	1859.3	157.6	6.4	9.1	7.2	0.0	0.0	-33.6
6/18/2010	1812.8	1.1	0.0	55.0	33.0	0.0	1714.2	151.0	6.4	9.1	7.2	0.0	0.0	14.0
6/19/2010	1786.0	0.9	0.0	60.6	33.0	0.0	1751.2	151.9	6.4	9.1	7.2	0.0	0.0	-45.4
6/20/2010	1656.2	1.8	0.0	67.9	33.0	0.0	1615.3	144.8	6.4	9.1	7.2	0.0	0.0	-24.0
6/21/2010	1610.9	0.8	0.0	74.7	33.0	0.0	1546.6	141.5	6.4	9.1	7.2	0.0	0.0	8.5
6/22/2010	1591.3	0.5	0.0	69.8	33.0	0.0	1533.5	140.5	6.4	9.1	7.2	0.0	0.0	-2.1
6/23/2010	1611.0	1.1	0.0	62.8	33.0	0.0	1506.2	140.3	6.4	9.1	7.2	0.0	0.0	38.7
6/24/2010	1642.8	0.8	0.0	61.7	33.0	0.0	1569.4	143.1	6.4	9.1	7.2	0.0	0.0	3.2
6/25/2010	1615.5	1.5	0.0	53.1	33.0	0.0	1535.8	141.3	6.4	9.1	7.2	0.0	0.0	3.3
6/26/2010	1718.0	1.4	0.0	55.7	33.0	0.0	1547.2	144.2	6.4	9.1	7.2	0.0	0.0	94.0
6/27/2010	1918.6	2.7	0.0	64.8	33.0	0.0	1758.7	155.3	6.4	9.1	7.2	0.0	0.0	82.4
6/28/2010	1991.6	4.2	0.0	62.5	33.0	0.0	1890.6	160.7	6.4	9.1	7.2	0.0	0.0	17.3
6/29/2010	2049.8	3.8	0.0	93.8	33.0	0.0	1938.6	163.3	6.4	9.1	7.2	0.0	0.0	55.9
6/30/2010	1817.9	1.8	4.7	78.9	33.0	0.0	1934.5	157.7	6.4	9.1	7.2	0.0	0.0	-178.6
7/1/2010	1427.8	3.8	0.0	83.8	33.0	0.0	1510.5	135.7	6.4	6.8	7.2	0.0	0.0	-118.2
7/2/2010	1239.0	2.0	0.0	97.1	33.0	0.0	1245.2	121.4	6.4	6.8	7.2	0.0	0.0	-15.8
7/3/2010	1229.1	1.5	0.0	76.5	33.0	0.0	1216.0	121.6	6.4	6.8	7.2	0.0	0.0	-17.9
7/4/2010	1082.6	4.4	0.0	88.5	33.0	0.0	1107.6	112.7	6.4	6.8	7.2	0.0	0.0	-32.2
7/5/2010	1019.3	2.8	0.0	87.2	33.0	0.0	1049.8	107.9	6.4	6.8	7.2	0.0	0.0	-35.7
7/6/2010	1334.5	3.8	0.0	69.2	33.0	0.0	1127.9	120.7	6.4	6.8	7.2	0.0	0.0	171.5
7/7/2010	1583.9	2.2	0.0	65.9	33.0	0.0	1442.5	137.8	6.4	6.8	7.2	0.0	0.0	84.3
7/8/2010	1795.5	3.6	0.0	63.9	33.0	0.0	1604.2	147.8	6.4	6.8	7.2	0.0	0.0	123.7
7/9/2010	1787.3	2.6	0.0	61.0	33.0	0.0	1770.9	152.4	6.4	6.8	7.2	0.0	0.0	-59.8
7/10/2010	1656.7	2.4	0.0	79.7	33.0	0.0	1631.3	145.3	6.4	6.8	7.2	0.0	0.0	-25.2
7/11/2010	1673.3	2.1	0.0	70.0	33.0	0.0	1546.5	142.7	6.4	6.8	7.2	0.0	0.0	68.8
7/12/2010	1818.5	2.4	0.0	118.5	33.0	0.0	1775.1	153.4	6.4	6.8	7.2	0.0	0.0	23.5
7/13/2010	1560.8	2.8	0.0	97.6	33.0	0.0	1643.4	142.7	6.4	6.8	7.2	0.0	0.0	-112.3
7/14/2010	1482.0	3.3	0.0	73.4	33.0	0.0	1389.6	132.6	6.4	6.8	7.2	0.0	0.0	49.2
7/15/2010	1511.6	3.3	0.0	68.5	33.0	0.0	1469.1	136.5	6.4	6.8	7.2	0.0	0.0	-9.6
7/16/2010	1439.7	1.9	0.0	65.4	33.0	0.0	1401.5	132.3	6.4	6.8	7.2	0.0	0.0	-14.0
7/17/2010	1402.8	2.7	0.0	74.8	33.0	0.0	1383.0	131.2	6.4	6.8	7.2	0.0	0.0	-21.2
7/18/2010	1406.0	2.2	0.0	69.7	33.0	0.0	1315.3	129.0	6.4	6.8	7.2	0.0	0.0	46.2

Table F1-4: RGCP Channel Water Budget Equation Analysis Segment 4

2010-12 Study Period

(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, above American Dam	Channel Seepage	MODFLOW Floodplain Recharge	Open Water Channel Evaporation	MODFLOW Riparian Evapo-transpiration	Diversions Authorized (None)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
7/19/2010	1409.1	1.8	0.0	73.2	33.0	0.0	1358.3	130.2	6.4	6.8	7.2	0.0	0.0	8.2
7/20/2010	1417.8	2.9	0.0	78.2	33.0	0.0	1362.2	130.7	6.4	6.8	7.2	0.0	0.0	18.6
7/21/2010	1485.5	2.5	0.0	97.0	33.0	0.0	1389.8	133.0	6.4	6.8	7.2	0.0	0.0	74.8
7/22/2010	1508.3	2.8	0.0	81.6	33.0	0.0	1489.7	137.0	6.4	6.8	7.2	0.0	0.0	-21.3
7/23/2010	1431.0	3.0	0.0	88.5	33.0	0.0	1417.2	132.8	6.4	6.8	7.2	0.0	0.0	-14.9
7/24/2010	1494.4	3.1	0.0	107.5	33.0	0.0	1401.3	133.8	6.4	6.8	7.2	0.0	0.0	82.6
7/25/2010	1436.5	1.4	0.0	108.5	33.0	0.0	1515.7	136.8	6.4	6.8	7.2	0.0	0.0	-93.5
7/26/2010	1436.9	4.6	0.0	101.8	33.0	0.0	1242.7	124.4	6.4	6.8	7.2	0.0	0.0	188.7
7/27/2010	1836.1	3.2	0.0	97.5	33.0	0.0	1884.6	158.0	6.4	6.8	7.2	0.0	0.0	-93.2
7/28/2010	1271.2	3.4	51.3	101.3	33.0	0.0	1456.7	128.5	6.4	6.8	7.2	0.0	0.0	-145.5
7/29/2010	1155.6	3.2	0.0	99.3	33.0	0.0	1158.1	115.5	6.4	6.8	7.2	0.0	0.0	-2.9
7/30/2010	1361.6	2.8	0.0	92.3	33.0	0.0	1280.4	127.4	6.4	6.8	7.2	0.0	0.0	61.5
7/31/2010	1245.0	2.1	0.0	93.1	33.0	0.0	1286.6	123.6	6.4	6.8	7.2	0.0	0.0	-57.4
8/1/2010	1139.6	4.1	0.0	79.3	33.0	0.0	1115.5	113.8	6.4	6.4	7.2	0.0	0.0	6.7
8/2/2010	1299.1	3.3	0.0	84.8	33.0	0.0	1204.5	122.9	6.4	6.4	7.2	0.0	0.0	72.8
8/3/2010	1290.4	1.8	0.0	94.5	33.0	0.0	1269.4	124.0	6.4	6.4	7.2	0.0	0.0	6.3
8/4/2010	1247.1	3.2	0.0	82.4	33.0	0.0	1229.9	121.3	6.4	6.4	7.2	0.0	0.0	-5.5
8/5/2010	1304.2	2.3	0.0	95.2	33.0	0.0	1240.8	123.7	6.4	6.4	7.2	0.0	0.0	50.2
8/6/2010	1254.4	2.8	0.0	82.8	33.0	0.0	1260.5	122.9	6.4	6.4	7.2	0.0	0.0	-30.3
8/7/2010	1229.7	3.1	0.0	88.5	33.0	0.0	1181.4	119.4	6.4	6.4	7.2	0.0	0.0	33.4
8/8/2010	1361.7	2.6	0.0	84.6	33.0	0.0	1250.5	125.7	6.4	6.4	7.2	0.0	0.0	85.7
8/9/2010	1455.4	2.0	0.0	89.9	33.0	0.0	1398.9	133.0	6.4	6.4	7.2	0.0	0.0	28.4
8/10/2010	1475.6	3.4	0.0	109.2	33.0	0.0	1422.0	133.7	6.4	6.4	7.2	0.0	0.0	45.5
8/11/2010	1588.2	3.2	0.0	107.9	33.0	0.0	1524.7	140.3	6.4	6.4	7.2	0.0	0.0	47.5
8/12/2010	1529.8	5.4	0.0	100.5	33.0	0.0	1544.6	139.3	6.4	6.4	7.2	0.0	0.0	-35.3
8/13/2010	1418.9	3.9	0.0	92.8	33.0	0.0	1411.1	132.0	6.4	6.4	7.2	0.0	0.0	-14.4
8/14/2010	1377.0	3.7	0.0	95.8	33.0	0.0	1368.0	129.9	6.4	6.4	7.2	0.0	0.0	-8.3
8/15/2010	1410.6	2.1	0.0	94.4	33.0	0.0	1309.0	128.5	6.4	6.4	7.2	0.0	0.0	82.7
8/16/2010	1557.5	3.4	0.0	109.1	33.0	0.0	1495.9	138.6	6.4	6.4	7.2	0.0	0.0	48.6
8/17/2010	1558.5	3.1	0.0	103.9	33.0	0.0	1529.4	139.4	6.4	6.4	7.2	0.0	0.0	9.7
8/18/2010	1542.9	2.7	0.0	97.6	33.0	0.0	1514.4	138.6	6.4	6.4	7.2	0.0	0.0	3.2
8/19/2010	1537.3	5.0	0.0	100.4	33.0	0.0	1497.3	138.1	6.4	6.4	7.2	0.0	0.0	20.3
8/20/2010	1543.8	1.9	0.0	100.8	33.0	0.0	1500.0	138.4	6.4	6.4	7.2	0.0	0.0	21.2
8/21/2010	1541.8	1.5	0.0	114.9	33.0	0.0	1514.7	138.6	6.4	6.4	7.2	0.0	0.0	17.9
8/22/2010	1628.1	1.8	0.0	98.9	33.0	0.0	1530.2	141.1	6.4	6.4	7.2	0.0	0.0	70.5
8/23/2010	1731.5	3.8	0.0	151.6	33.0	0.0	1709.7	149.2	6.4	6.4	7.2	0.0	0.0	41.1
8/24/2010	1695.7	2.3	0.0	143.6	33.0	0.0	1728.4	148.3	6.4	6.4	7.2	0.0	0.0	-22.0
8/25/2010	1780.9	1.0	0.0	191.6	33.0	0.0	1772.3	152.4	6.4	6.4	7.2	0.0	0.0	61.7
8/26/2010	1554.5	2.5	0.0	130.7	33.0	0.0	1683.4	144.6	6.4	6.4	7.2	0.0	0.0	-127.2
8/27/2010	1251.7	0.9	0.0	97.8	33.0	0.0	1338.9	124.8	6.4	6.4	7.2	0.0	0.0	-100.2
8/28/2010	1165.2	1.2	0.0	96.9	33.0	0.0	1177.6	117.1	6.4	6.4	7.2	0.0	0.0	-18.3
8/29/2010	1156.4	2.2	0.0	93.4	33.0	0.0	1154.9	116.4	6.4	6.4	7.2	0.0	0.0	-6.3
8/30/2010	1158.2	1.3	0.0	101.3	33.0	0.0	1138.8	116.4	6.4	6.4	7.2	0.0	0.0	18.7
8/31/2010	1041.4	3.0	0.0	101.4	33.0	0.0	1107.1	111.8	6.4	6.4	7.2	0.0	0.0	-60.1
9/1/2010	759.7	2.2	35.1	101.3	33.0	0.0	929.1	95.0	6.4	5.1	7.2	0.0	0.0	-111.5
9/2/2010	470.0	3.4	84.1	105.4	33.0	0.0	692.5	70.3	6.4	5.1	7.2	0.0	0.0	-85.6
9/3/2010	302.4	2.1	39.5	119.9	33.0	0.0	494.8	50.7	6.4	5.1	7.2	0.0	0.0	-67.3
9/4/2010	298.6	2.5	0.0	116.8	33.0	0.0	371.2	42.4	6.4	5.1	7.2	0.0	0.0	18.6
9/5/2010	436.2	5.3	0.0	118.8	33.0	0.0	384.8	50.9	6.4	5.1	7.2	0.0	0.0	138.8
9/6/2010	857.2	3.6	0.0	110.6	33.0	0.0	583.0	87.2	6.4	5.1	7.2	0.0	0.0	315.5
9/7/2010	814.9	3.0	0.0	100.8	33.0	0.0	855.7	94.1	6.4	5.1	7.2	0.0	0.0	-16.9



Table F1-4: RGCP Channel Water Budget Equation Analysis Segment 4

2010-12 Study Period

(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
	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, above American Dam	Channel Seepage	MODFLOW Floodplain Recharge	Open Water Channel Evaporation	MODFLOW Riparian Evapo- transpiration	Diversions Authorized (None)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
Date														
9/8/2010	724.5	2.5	0.0	97.0	33.0	0.0	788.2	87.5	6.4	5.1	7.2	0.0	0.0	-37.5
9/9/2010	738.0	0.8	0.0	97.7	33.0	0.0	734.3	85.4	6.4	5.1	7.2	0.0	0.0	30.9
9/10/2010	745.3	3.6	0.0	101.0	33.0	0.0	744.6	86.6	6.4	5.1	7.2	0.0	0.0	33.0
9/11/2010	778.0	4.9	0.0	93.0	33.0	0.0	734.6	85.7	6.4	5.1	7.2	0.0	0.0	69.9
9/12/2010	766.6	3.0	0.0	91.3	33.0	0.0	801.8	90.1	6.4	5.1	7.2	0.0	0.0	-16.8
9/13/2010	845.3	1.9	0.0	92.1	33.0	0.0	781.9	92.2	6.4	5.1	7.2	0.0	0.0	79.4
9/14/2010	772.1	2.2	0.0	89.2	33.0	0.0	845.2	92.2	6.4	5.1	7.2	0.0	0.0	-59.7
9/15/2010	659.5	1.9	0.0	87.1	33.0	0.0	728.9	81.7	6.4	5.1	7.2	0.0	0.0	-47.8
9/16/2010	577.9	2.0	0.0	83.3	33.0	0.0	647.1	73.5	6.4	5.1	7.2	0.0	0.0	-43.2
9/17/2010	511.4	1.6	0.0	81.2	33.0	0.0	574.7	66.3	6.4	5.1	7.2	0.0	0.0	-32.5
9/18/2010	455.8	2.0	0.0	79.1	33.0	0.0	518.7	60.7	6.4	5.1	7.2	0.0	0.0	-28.2
9/19/2010	400.3	2.2	0.0	77.2	33.0	0.0	466.9	54.1	6.4	5.1	7.2	0.0	0.0	-27.1
9/20/2010	450.7	3.4	0.0	76.4	33.0	0.0	427.6	54.5	6.4	5.1	7.2	0.0	0.0	62.7
9/21/2010	467.5	1.9	0.0	79.3	33.0	0.0	476.0	59.3	6.4	5.1	7.2	0.0	0.0	27.6
9/22/2010	425.2	3.9	0.0	79.0	33.0	0.0	480.1	56.3	6.4	5.1	7.2	0.0	0.0	-14.0
9/23/2010	500.1	3.9	0.0	76.5	33.0	0.0	448.9	57.7	6.4	5.1	7.2	0.0	0.0	88.2
9/24/2010	611.5	2.4	0.0	61.8	33.0	0.0	539.2	69.8	6.4	5.1	7.2	0.0	0.0	80.8
9/25/2010	575.7	3.2	0.0	51.1	33.0	0.0	608.9	73.2	6.4	5.1	7.2	0.0	0.0	-37.8
9/26/2010	467.5	0.5	0.0	54.6	33.0	0.0	531.1	61.7	6.4	5.1	7.2	0.0	0.0	-56.0
9/27/2010	377.6	2.5	0.0	71.7	33.0	0.0	465.1	53.7	6.4	5.1	7.2	0.0	0.0	-52.8
9/28/2010	348.9	0.9	0.0	49.6	33.0	0.0	375.5	46.1	6.4	5.1	7.2	0.0	0.0	-7.8
9/29/2010	343.0	0.2	0.0	57.4	33.0	0.0	357.0	45.4	6.4	5.1	7.2	0.0	0.0	12.4
9/30/2010	335.3	3.0	0.0	71.3	33.0	0.0	363.9	45.2	6.4	5.1	7.2	0.0	0.0	14.7
10/1/2010	396.5	1.2	0.0	66.5	33.0	0.0	357.7	46.3	6.4	0.0	7.2	0.0	0.0	79.5
10/2/2010	756.8	1.2	0.0	77.5	33.0	0.0	531.8	82.9	6.4	0.0	7.2	0.0	0.0	240.1
10/3/2010	712.7	1.9	0.0	79.1	33.0	0.0	734.8	83.9	6.4	0.0	7.2	0.0	0.0	-5.7
10/4/2010	739.3	2.0	0.0	74.7	33.0	0.0	700.8	82.7	6.4	0.0	7.2	0.0	0.0	51.9
10/5/2010	806.9	1.1	0.0	68.4	33.0	0.0	766.6	90.1	6.4	0.0	7.2	0.0	0.0	39.1
10/6/2010	801.0	0.2	0.0	41.0	33.0	0.0	764.1	89.4	6.4	0.0	7.2	0.0	0.0	8.2
10/7/2010	737.3	0.5	0.0	40.0	33.0	0.0	746.5	86.5	6.4	0.0	7.2	0.0	0.0	-35.8
10/8/2010	286.6	0.5	0.0	36.5	33.0	0.0	351.2	79.3	6.4	0.0	7.2	0.0	0.0	-87.5
10/9/2010	209.5	0.7	9.6	33.9	33.0	0.0	286.0	72.0	6.4	0.0	7.2	0.0	0.0	-84.9
10/10/2010	154.0	0.8	0.0	32.3	33.0	0.0	216.0	65.3	6.4	0.0	7.2	0.0	0.0	-74.8
10/11/2010	109.6	1.3	0.0	31.3	33.0	0.0	170.8	60.7	6.4	0.0	7.2	0.0	0.0	-69.9
10/12/2010	89.6	0.5	0.0	29.6	33.0	0.0	133.9	57.6	6.4	0.0	7.2	0.0	0.0	-52.4
10/13/2010	83.4	1.6	0.0	28.7	33.0	0.0	118.1	56.4	6.4	0.0	7.2	0.0	0.0	-41.5
10/14/2010	83.7	0.9	0.0	27.0	33.0	0.0	111.9	56.0	6.4	0.0	7.2	0.0	0.0	-36.9
10/15/2010	100.8	0.9	0.0	26.1	33.0	0.0	112.3	56.8	6.4	0.0	7.2	0.0	0.0	-21.9
10/16/2010	130.4	1.1	0.0	25.6	33.0	0.0	130.1	59.5	6.4	0.0	7.2	0.0	0.0	-13.1
10/17/2010	145.7	1.4	0.0	24.9	33.0	0.0	156.9	62.0	6.4	0.0	7.2	0.0	0.0	-27.6
10/18/2010	161.3	1.2	0.0	35.6	33.0	0.0	174.5	63.6	6.4	0.0	7.2	0.0	0.0	-20.7
10/19/2010	176.3	0.8	0.0	45.8	33.0	0.0	200.1	65.7	6.4	0.0	7.2	0.0	0.0	-23.5
10/20/2010	188.0	1.0	0.0	46.6	33.0	0.0	216.7	67.0	6.4	0.0	7.2	0.0	0.0	-28.6
10/21/2010	198.0	1.4	0.0	44.4	33.0	0.0	225.5	67.9	6.4	0.0	7.2	0.0	0.0	-30.2
10/22/2010	203.9	2.0	0.0	44.0	33.0	0.0	233.4	68.6	6.4	0.0	7.2	0.0	0.0	-32.8
10/23/2010	208.6	1.9	0.0	43.0	33.0	0.0	236.9	69.1	6.4	0.0	7.2	0.0	0.0	-33.1
10/24/2010	216.6	1.1	0.0	42.0	33.0	0.0	240.4	69.6	6.4	0.0	7.2	0.0	0.0	-31.0
10/25/2010	223.9	1.5	0.0	41.0	33.0	0.0	247.5	70.4	6.4	0.0	7.2	0.0	0.0	-32.2
10/26/2010	228.1	1.1	0.0	39.9	33.0	0.0	252.2	70.9	6.4	0.0	7.2	0.0	0.0	-34.5
10/27/2010	235.5	1.4	0.0	38.8	33.0	0.0	254.6	71.4	6.4	0.0	7.2	0.0	0.0	-31.0
10/28/2010	242.6	1.6	0.0	37.4	33.0	0.0	260.8	72.1	6.4	0.0	7.2	0.0	0.0	-31.9



Table F1-4: RGCP Channel Water Budget Equation Analysis Segment 4														
2010-12 Study Period														
(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, above American Dam	Channel Seepage	MODFLOW Floodplain Recharge	Open Water Channel Evaporation	MODFLOW Riparian Evapo-transpiration	Diversions Authorized (None)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
10/29/2010	252.7	1.2	0.0	36.4	33.0	0.0	266.5	72.9	6.4	0.0	7.2	0.0	0.0	-29.7
10/30/2010	264.1	0.9	0.0	37.1	33.0	0.0	276.0	73.9	6.4	0.0	7.2	0.0	0.0	-28.5
10/31/2010	273.1	0.8	0.0	36.0	33.0	0.0	285.8	74.9	6.4	0.0	7.2	0.0	0.0	-31.4
11/1/2010	294.7	0.2	0.0	34.2	33.0	0.8	292.5	76.3	0.1	0.0	2.5	0.0	0.0	-8.5
11/2/2010	309.9	0.7	0.0	34.7	33.0	0.8	314.4	78.3	0.1	0.0	2.5	0.0	0.0	-16.4
11/3/2010	313.0	1.0	0.0	31.9	33.0	0.8	323.8	79.0	0.1	0.0	2.5	0.0	0.0	-25.7
11/4/2010	325.0	0.5	0.0	35.9	33.0	0.8	327.0	79.6	0.1	0.0	2.5	0.0	0.0	-14.0
11/5/2010	335.6	0.1	0.0	33.7	33.0	0.8	340.4	80.8	0.1	0.0	2.5	0.0	0.0	-20.7
11/6/2010	340.0	0.8	0.0	33.2	33.0	0.8	347.2	81.4	0.1	0.0	2.5	0.0	0.0	-23.4
11/7/2010	344.0	0.8	0.0	32.7	33.0	0.8	350.0	81.7	0.1	0.0	2.5	0.0	0.0	-23.1
11/8/2010	353.7	0.9	0.0	32.0	33.0	0.8	353.4	82.3	0.1	0.0	2.5	0.0	0.0	-18.0
11/9/2010	369.1	0.2	0.0	32.1	33.0	0.8	364.1	83.5	0.1	0.0	2.5	0.0	0.0	-15.1
11/10/2010	380.1	0.4	0.0	29.4	33.0	0.8	377.0	84.7	0.1	0.0	2.5	0.0	0.0	-20.6
11/11/2010	392.9	0.8	0.0	30.3	33.0	0.8	385.8	85.6	0.1	0.0	2.5	0.0	0.0	-16.1
11/12/2010	402.4	0.9	0.0	29.6	33.0	0.8	398.3	86.6	0.1	0.0	2.5	0.0	0.0	-20.8
11/13/2010	408.9	1.8	0.0	28.6	33.0	0.8	404.1	87.1	0.1	0.0	2.5	0.0	0.0	-20.7
11/14/2010	422.5	1.7	0.0	28.5	33.0	0.8	411.2	87.9	0.1	0.0	2.5	0.0	0.0	-15.3
11/15/2010	436.4	1.5	0.0	27.7	33.0	0.8	424.3	89.1	0.1	0.0	2.5	0.0	0.0	-16.6
11/16/2010	447.6	0.6	0.0	23.4	33.0	0.8	434.7	89.9	0.1	0.0	2.5	0.0	0.0	-21.8
11/17/2010	457.9	0.3	0.0	34.5	33.0	0.8	451.0	90.9	0.1	0.0	2.5	0.0	0.0	-18.0
11/18/2010	455.9	0.5	0.0	22.4	33.0	0.8	451.3	90.8	0.1	0.0	2.5	0.0	0.0	-32.1
11/19/2010	456.7	0.1	0.0	23.1	33.0	0.8	445.0	90.6	0.1	0.0	2.5	0.0	0.0	-24.5
11/20/2010	468.0	0.3	0.0	22.6	33.0	0.8	448.8	91.2	0.1	0.0	2.5	0.0	0.0	-17.9
11/21/2010	476.8	0.5	0.0	21.8	33.0	0.8	459.8	92.0	0.1	0.0	2.5	0.0	0.0	-21.5
11/22/2010	485.0	0.7	0.0	21.4	33.0	0.8	466.8	92.6	0.1	0.0	2.5	0.0	0.0	-21.1
11/23/2010	489.1	0.3	0.0	21.1	33.0	0.8	473.3	93.1	0.1	0.0	2.5	0.0	0.0	-24.7
11/24/2010	495.9	1.0	0.0	20.8	33.0	0.8	476.2	93.5	0.1	0.0	2.5	0.0	0.0	-20.8
11/25/2010	494.4	0.4	0.0	19.7	33.0	0.8	481.1	93.6	0.1	0.0	2.5	0.0	0.0	-28.9
11/26/2010	493.8	1.2	0.0	18.8	33.0	0.8	476.6	93.4	0.1	0.0	2.5	0.0	0.0	-25.0
11/27/2010	495.0	0.9	0.0	19.4	33.0	0.8	477.7	93.5	0.1	0.0	2.5	0.0	0.0	-24.7
11/28/2010	497.6	0.7	0.0	19.9	33.0	0.8	479.6	93.7	0.1	0.0	2.5	0.0	0.0	-23.9
11/29/2010	492.9	0.7	0.0	20.6	33.0	0.8	481.4	93.6	0.1	0.0	2.5	0.0	0.0	-29.6
11/30/2010	485.3	0.9	0.0	19.7	33.0	0.8	473.9	93.0	0.1	0.0	2.5	0.0	0.0	-29.7
12/1/2010	483.4	1.4	0.0	17.5	33.0	0.8	466.8	92.6	0.1	0.0	2.5	0.0	0.0	-25.9
12/2/2010	454.3	1.0	0.0	17.9	33.0	0.8	460.9	91.3	0.1	0.0	2.5	0.0	0.0	-47.8
12/3/2010	434.9	1.3	0.0	18.1	33.0	0.8	430.0	89.0	0.1	0.0	2.5	0.0	0.0	-33.6
12/4/2010	447.8	1.0	0.0	17.6	33.0	0.8	421.1	89.2	0.1	0.0	2.5	0.0	0.0	-12.6
12/5/2010	459.3	0.8	0.0	17.4	33.0	0.8	438.4	90.4	0.1	0.0	2.5	0.0	0.0	-20.2
12/6/2010	464.0	0.1	0.0	16.8	33.0	0.8	445.5	90.9	0.1	0.0	2.5	0.0	0.0	-24.4
12/7/2010	263.7	1.4	105.0	17.1	33.0	0.8	418.8	81.8	0.1	0.0	2.5	0.0	0.0	-82.3
12/8/2010	90.2	1.4	75.8	17.0	33.0	0.8	215.9	61.4	0.1	0.0	2.5	0.0	0.0	-61.9
12/9/2010	30.8	1.6	11.8	17.0	33.0	0.8	92.6	30.8	0.1	0.0	2.5	0.0	0.0	-31.0
12/10/2010	30.6	1.0	0.0	17.0	33.0	0.8	55.8	30.6	0.1	0.0	2.5	0.0	0.0	-6.7
12/11/2010	31.5	1.0	0.0	16.7	33.0	0.8	55.6	31.5	0.1	0.0	2.5	0.0	0.0	-6.8
12/12/2010	31.6	0.2	0.0	16.7	33.0	0.8	56.4	31.6	0.1	0.0	2.5	0.0	0.0	-8.3
12/13/2010	30.7	2.2	0.0	15.9	33.0	0.8	55.5	30.7	0.1	0.0	2.5	0.0	0.0	-6.2
12/14/2010	32.4	1.5	0.0	16.4	33.0	0.8	55.0	32.4	0.1	0.0	2.5	0.0	0.0	-5.9
12/15/2010	35.4	0.2	0.0	19.0	33.0	0.8	57.3	35.4	0.1	0.0	2.5	0.0	0.0	-6.9
12/16/2010	40.7	0.4	0.0	18.9	33.0	0.8	60.8	40.7	0.1	0.0	2.5	0.0	0.0	-10.3
12/17/2010	44.1	0.7	0.0	18.3	33.0	0.8	66.6	44.1	0.1	0.0	2.5	0.0	0.0	-16.5
12/18/2010	43.0	1.5	0.0	17.7	33.0	0.8	68.3	43.0	0.1	0.0	2.5	0.0	0.0	-18.0

Table F1-4: RGCP Channel Water Budget Equation Analysis Segment 4

2010-12 Study Period

(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, above American Dam	Channel Seepage	MODFLOW Floodplain Recharge	Open Water Channel Evaporation	MODFLOW Riparian Evapo- transpiration	Diversions Authorized (None)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
12/19/2010	44.4	0.5	0.0	17.8	33.0	0.8	66.8	44.4	0.1	0.0	2.5	0.0	0.0	-17.3
12/20/2010	50.8	0.5	0.0	17.5	33.0	0.8	69.0	50.8	0.1	0.0	2.5	0.0	0.0	-19.8
12/21/2010	62.6	1.5	0.0	17.3	33.0	0.8	74.8	52.7	0.1	0.0	2.5	0.0	0.0	-15.0
12/22/2010	72.9	1.1	0.0	17.1	33.0	0.8	85.6	54.0	0.1	0.0	2.5	0.0	0.0	-17.4
12/23/2010	77.9	1.7	0.0	16.1	33.0	0.8	93.4	54.6	0.1	0.0	2.5	0.0	0.0	-21.1
12/24/2010	85.1	0.6	0.0	15.5	33.0	0.8	97.5	55.3	0.1	0.0	2.5	0.0	0.0	-20.4
12/25/2010	86.8	1.6	0.0	14.4	33.0	0.8	102.2	55.7	0.1	0.0	2.5	0.0	0.0	-23.9
12/26/2010	91.5	1.5	0.0	13.4	33.0	0.8	102.7	55.9	0.1	0.0	2.5	0.0	0.0	-20.9
12/27/2010	97.5	0.2	0.0	13.6	33.0	0.8	107.7	56.6	0.1	0.0	2.5	0.0	0.0	-21.7
12/28/2010	103.2	0.7	0.0	15.1	33.0	0.8	113.4	57.2	0.1	0.0	2.5	0.0	0.0	-20.4
12/29/2010	106.7	1.4	0.0	13.1	33.0	0.8	118.0	57.7	0.1	0.0	2.5	0.0	0.0	-23.3
12/30/2010	109.1	0.7	0.0	12.4	33.0	0.8	119.4	57.8	0.1	0.0	2.5	0.0	0.0	-24.0
12/31/2010	111.7	0.9	0.0	12.7	33.0	0.8	121.7	58.1	0.1	0.0	2.5	0.0	0.0	-23.3
1/1/2011	115.5	0.3	0.0	12.8	33.0	0.8	124.2	58.5	0.1	0.0	2.5	0.0	0.0	-22.9
1/2/2011	118.5	0.9	0.0	12.0	33.0	0.8	127.4	58.8	0.1	0.0	2.5	0.0	0.0	-23.7
1/3/2011	122.2	0.5	0.0	13.0	33.0	0.8	130.2	59.2	0.1	0.0	2.5	0.0	0.0	-22.4
1/4/2011	126.8	0.6	0.0	12.5	33.0	0.8	133.9	59.6	0.1	0.0	2.5	0.0	0.0	-22.5
1/5/2011	128.3	0.3	0.0	12.2	33.0	0.8	137.5	59.9	0.1	0.0	2.5	0.0	0.0	-25.4
1/6/2011	128.0	0.9	0.0	11.8	33.0	0.8	138.2	59.9	0.1	0.0	2.5	0.0	0.0	-26.2
1/7/2011	128.9	0.5	0.0	11.5	33.0	0.8	137.4	59.9	0.1	0.0	2.5	0.0	0.0	-25.1
1/8/2011	130.1	0.8	0.0	11.9	33.0	0.8	138.5	60.0	0.1	0.0	2.5	0.0	0.0	-24.6
1/9/2011	130.5	0.4	0.0	12.1	33.0	0.8	139.6	60.1	0.1	0.0	2.5	0.0	0.0	-25.4
1/10/2011	132.5	0.6	0.0	13.5	33.0	0.8	141.0	60.3	0.1	0.0	2.5	0.0	0.0	-23.6
1/11/2011	136.6	0.9	0.0	11.9	33.0	0.8	142.7	60.6	0.1	0.0	2.5	0.0	0.0	-22.7
1/12/2011	138.5	0.9	0.0	11.3	33.0	0.8	145.3	60.9	0.1	0.0	2.5	0.0	0.0	-24.3
1/13/2011	141.0	0.8	0.0	14.8	33.0	0.8	149.2	61.2	0.1	0.0	2.5	0.0	0.0	-22.7
1/14/2011	143.3	0.5	0.0	16.9	33.0	0.8	154.0	61.5	0.1	0.0	2.5	0.0	0.0	-23.5
1/15/2011	144.6	0.4	0.0	16.1	33.0	0.8	156.0	61.7	0.1	0.0	2.5	0.0	0.0	-25.3
1/16/2011	143.9	0.3	0.0	16.0	33.0	0.8	156.6	61.7	0.1	0.0	2.5	0.0	0.0	-26.8
1/17/2011	123.3	1.4	0.0	5.5	33.0	0.8	151.3	60.1	0.1	0.0	2.5	0.0	0.0	-50.1
1/18/2011	74.1	1.6	7.2	11.8	33.0	0.8	126.0	56.6	0.1	0.0	2.5	0.0	0.0	-56.7
1/19/2011	78.6	0.9	0.0	11.0	33.0	0.8	82.1	52.7	0.1	0.0	2.5	0.0	0.0	-13.1
1/20/2011	80.3	0.8	0.0	10.7	33.0	0.8	99.4	55.6	0.1	0.0	2.5	0.0	0.0	-32.0
1/21/2011	61.6	0.8	0.0	10.6	33.0	0.8	89.4	53.0	0.1	0.0	2.5	0.0	0.0	-38.4
1/22/2011	56.3	0.5	0.0	10.2	33.0	0.8	76.2	52.2	0.1	0.0	2.5	0.0	0.0	-30.3
1/23/2011	50.9	0.7	0.0	10.2	33.0	0.8	70.7	50.9	0.1	0.0	2.5	0.0	0.0	-28.7
1/24/2011	59.6	0.8	0.0	9.2	33.0	0.8	67.7	51.9	0.1	0.0	2.5	0.0	0.0	-18.9
1/25/2011	68.1	0.9	0.0	8.3	33.0	0.8	74.2	52.8	0.1	0.0	2.5	0.0	0.0	-18.6
1/26/2011	77.1	0.9	0.0	8.1	33.0	0.8	82.1	53.8	0.1	0.0	2.5	0.0	0.0	-18.6
1/27/2011	69.8	0.3	0.0	9.3	33.0	0.8	90.1	54.0	0.1	0.0	2.5	0.0	0.0	-33.5
1/28/2011	56.6	0.5	0.0	10.4	33.0	0.8	81.7	52.5	0.1	0.0	2.5	0.0	0.0	-35.6
1/29/2011	50.7	0.2	0.0	10.7	33.0	0.8	71.6	50.7	0.1	0.0	2.5	0.0	0.0	-29.6
1/30/2011	54.0	0.5	0.0	10.3	33.0	0.8	67.3	51.5	0.1	0.0	2.5	0.0	0.0	-22.8
1/31/2011	75.1	1.0	0.0	10.4	33.0	0.8	71.6	53.0	0.1	0.0	2.5	0.0	0.0	-6.8
2/1/2011	75.1	0.3	0.0	10.1	33.0	0.8	89.5	54.0	0.1	0.0	2.5	0.0	0.0	-26.8
2/2/2011	68.6	1.3	0.0	9.3	33.0	0.8	88.7	53.7	0.1	0.0	2.5	0.0	0.0	-32.0
2/3/2011	64.2	1.3	0.0	9.6	33.0	0.8	80.5	52.8	0.1	0.0	2.5	0.0	0.0	-27.1
2/4/2011	64.8	1.5	0.0	10.8	33.0	0.8	79.1	52.9	0.1	0.0	2.5	0.0	0.0	-23.7
2/5/2011	69.7	1.9	0.0	10.0	33.0	0.8	80.3	53.1	0.1	0.0	2.5	0.0	0.0	-20.7
2/6/2011	78.4	0.3	0.0	10.2	33.0	0.8	85.1	53.9	0.1	0.0	2.5	0.0	0.0	-18.9
2/7/2011	80.2	0.5	0.0	10.4	33.0	0.8	93.1	54.6	0.1	0.0	2.5	0.0	0.0	-25.4

Table F1-4: RGCP Channel Water Budget Equation Analysis Segment 4

2010-12 Study Period

(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, above American Dam	Channel Seepage	MODFLOW Floodplain Recharge	Open Water Channel Evaporation	MODFLOW Riparian Evapo-transpiration	Diversions Authorized (None)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
2/8/2011	79.0	1.3	0.0	9.5	33.0	0.8	93.4	54.4	0.1	0.0	2.5	0.0	0.0	-26.8
2/9/2011	80.1	0.5	0.0	8.6	33.0	0.8	91.3	54.3	0.1	0.0	2.5	0.0	0.0	-25.2
2/10/2011	80.4	1.3	0.0	8.4	33.0	0.8	92.0	54.4	0.1	0.0	2.5	0.0	0.0	-25.1
2/11/2011	76.8	1.0	0.0	8.3	33.0	0.8	91.8	54.2	0.1	0.0	2.5	0.0	0.0	-28.7
2/12/2011	72.2	1.1	0.0	8.2	33.0	0.8	88.5	53.9	0.1	0.0	2.5	0.0	0.0	-29.7
2/13/2011	61.5	1.0	0.0	8.3	33.0	0.8	82.8	52.7	0.1	0.0	2.5	0.0	0.0	-33.5
2/14/2011	69.5	0.9	0.0	8.3	33.0	0.8	75.7	52.9	0.1	0.0	2.5	0.0	0.0	-18.7
2/15/2011	63.6	0.9	0.0	8.2	33.0	0.8	81.9	53.0	0.1	0.0	2.5	0.0	0.0	-31.0
2/16/2011	62.5	1.0	0.0	8.7	33.0	0.8	76.8	52.5	0.1	0.0	2.5	0.0	0.0	-26.0
2/17/2011	63.4	0.4	0.0	8.5	33.0	0.8	76.2	52.5	0.1	0.0	2.5	0.0	0.0	-25.3
2/18/2011	64.2	0.5	0.0	7.7	33.0	0.8	76.5	52.6	0.1	0.0	2.5	0.0	0.0	-25.6
2/19/2011	60.7	0.3	0.0	7.5	33.0	0.8	76.6	52.5	0.1	0.0	2.5	0.0	0.0	-29.5
2/20/2011	58.1	1.8	0.0	7.2	33.0	0.8	72.4	52.0	0.1	0.0	2.5	0.0	0.0	-26.2
2/21/2011	60.6	0.7	0.0	7.0	33.0	0.8	70.7	52.1	0.1	0.0	2.5	0.0	0.0	-23.2
2/22/2011	62.8	0.5	0.0	11.6	33.0	0.8	74.5	52.7	0.1	0.0	2.5	0.0	0.0	-21.1
2/23/2011	75.3	0.5	0.0	14.8	33.0	0.8	79.8	53.6	0.1	0.0	2.5	0.0	0.0	-11.6
2/24/2011	85.2	0.6	0.0	9.7	33.0	0.8	92.6	55.2	0.1	0.0	2.5	0.0	0.0	-21.1
2/25/2011	85.4	0.6	0.0	9.0	33.0	0.8	97.4	55.4	0.1	0.0	2.5	0.0	0.0	-26.6
2/26/2011	82.7	0.3	0.0	9.0	33.0	0.8	96.5	55.2	0.1	0.0	2.5	0.0	0.0	-28.5
2/27/2011	82.7	0.3	0.0	9.1	33.0	0.8	94.0	55.0	0.1	0.0	2.5	0.0	0.0	-25.7
2/28/2011	81.2	0.9	0.0	8.8	33.0	0.8	94.2	55.0	0.1	0.0	2.5	0.0	0.0	-27.1
3/1/2011	79.5	1.0	0.0	8.4	33.0	0.0	92.2	54.7	6.4	2.6	7.2	0.0	0.0	-41.1
3/2/2011	78.7	0.6	0.0	8.1	33.0	0.0	90.6	54.6	6.4	2.6	7.2	0.0	0.0	-41.0
3/3/2011	75.6	0.4	0.0	8.0	33.0	0.0	89.4	54.4	6.4	2.6	7.2	0.0	0.0	-43.0
3/4/2011	72.3	0.1	0.0	8.5	33.0	0.0	86.8	54.1	6.4	2.6	7.2	0.0	0.0	-43.2
3/5/2011	70.5	0.5	0.0	7.6	33.0	0.0	83.8	53.7	6.4	2.6	7.2	0.0	0.0	-42.1
3/6/2011	68.0	0.8	0.0	7.3	33.0	0.0	81.7	53.5	6.4	2.6	7.2	0.0	0.0	-42.3
3/7/2011	76.2	0.3	0.0	8.2	33.0	0.0	79.5	53.7	6.4	2.6	7.2	0.0	0.0	-31.7
3/8/2011	84.1	0.4	0.0	7.8	33.0	0.0	89.8	54.9	6.4	2.6	7.2	0.0	0.0	-35.5
3/9/2011	80.1	0.3	0.0	7.8	33.0	0.0	94.8	55.0	6.4	2.6	7.2	0.0	0.0	-44.8
3/10/2011	73.8	1.3	0.0	8.2	33.0	0.0	89.8	54.3	6.4	2.6	7.2	0.0	0.0	-44.1
3/11/2011	443.6	0.9	0.0	8.3	33.0	0.0	404.3	53.7	6.4	2.6	7.2	0.0	0.0	11.7
3/12/2011	434.4	1.2	0.0	8.4	33.0	0.0	397.7	52.8	6.4	2.6	7.2	0.0	0.0	10.3
3/13/2011	424.3	0.1	0.0	8.4	33.0	0.0	389.4	51.7	6.4	2.6	7.2	0.0	0.0	8.5
3/14/2011	429.0	0.7	0.0	8.6	33.0	0.0	380.5	50.8	6.4	2.6	7.2	0.0	0.0	23.7
3/15/2011	645.0	0.7	0.0	8.5	33.0	0.0	432.8	68.5	6.4	2.6	7.2	0.0	0.0	169.8
3/16/2011	647.3	0.1	0.0	8.4	33.0	0.0	580.0	73.5	6.4	2.6	7.2	0.0	0.0	19.1
3/17/2011	809.9	0.5	0.0	8.2	33.0	0.0	583.0	78.1	6.4	2.6	7.2	0.0	0.0	174.2
3/18/2011	1371.3	0.4	0.0	8.4	33.0	0.0	997.2	119.3	6.4	2.6	7.2	0.0	0.0	280.5
3/19/2011	1577.3	0.5	0.0	8.8	33.0	0.0	1335.1	133.7	6.4	2.6	7.2	0.0	0.0	134.7
3/20/2011	2058.3	0.8	0.0	8.5	33.0	0.0	1758.4	159.2	6.4	2.6	7.2	0.0	0.0	166.7
3/21/2011	2203.0	0.1	0.0	8.1	33.0	0.0	2022.0	169.4	6.4	2.6	7.2	0.0	0.0	36.5
3/22/2011	2244.6	0.3	0.0	7.8	33.0	0.0	2039.8	170.4	6.4	2.6	7.2	0.0	0.0	59.4
3/23/2011	2414.0	0.1	0.0	7.3	33.0	0.0	2164.3	177.7	6.4	2.6	7.2	0.0	0.0	96.3
3/24/2011	2548.0	0.3	0.0	7.3	33.0	0.0	2341.6	185.5	6.4	2.6	7.2	0.0	0.0	45.4
3/25/2011	2580.7	0.2	0.0	6.9	33.0	0.0	2393.1	187.4	6.4	2.6	7.2	0.0	0.0	24.1
3/26/2011	2599.2	0.6	0.0	6.5	33.0	0.0	2405.7	188.1	6.4	2.6	7.2	0.0	0.0	29.4
3/27/2011	1962.7	0.5	346.5	6.7	33.0	0.0	2348.9	172.6	6.4	2.6	7.2	0.0	0.0	-188.2
3/28/2011	989.1	0.2	192.3	10.4	33.0	0.0	1224.8	113.0	6.4	2.6	7.2	0.0	0.0	-128.9
3/29/2011	652.7	0.2	42.4	11.6	33.0	0.0	739.7	82.0	6.4	2.6	7.2	0.0	0.0	-98.0
3/30/2011	529.1	0.3	0.0	10.5	33.0	0.0	549.8	65.3	6.4	2.6	7.2	0.0	0.0	-58.3

Table F1-4: RGCP Channel Water Budget Equation Analysis Segment 4

2010-12 Study Period

(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, above American Dam	Channel Seepage	MODFLOW Floodplain Recharge	Open Water Channel Evaporation	MODFLOW Riparian Evapo-transpiration	Diversions Authorized (None)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
3/31/2011	526.0	0.1	0.0	11.3	33.0	0.0	471.8	61.5	6.4	2.6	7.2	0.0	0.0	20.8
4/1/2011	2351.2	0.2	0.0	11.5	33.0	0.0	477.3	143.6	6.4	5.6	7.2	0.0	0.0	1755.8
4/2/2011	1768.5	0.2	15.3	9.9	33.0	0.0	1826.7	153.6	6.4	5.6	7.2	0.0	0.0	-172.6
4/3/2011	1351.1	0.1	0.0	8.9	33.0	0.0	1373.3	128.9	6.4	5.6	7.2	0.0	0.0	-128.3
4/4/2011	1232.9	0.3	0.0	8.0	33.0	0.0	1147.8	118.3	6.4	5.6	7.2	0.0	0.0	-11.1
4/5/2011	1324.8	0.9	0.0	8.0	33.0	0.0	1163.3	121.7	6.4	5.6	7.2	0.0	0.0	62.4
4/6/2011	1522.6	0.6	0.0	7.6	33.0	0.0	1315.1	132.3	6.4	5.6	7.2	0.0	0.0	97.2
4/7/2011	1647.8	0.3	0.0	7.7	33.0	0.0	1494.7	141.2	6.4	5.6	7.2	0.0	0.0	33.6
4/8/2011	1624.4	0.0	0.0	8.3	33.0	0.0	1527.8	141.9	6.4	5.6	7.2	0.0	0.0	-23.3
4/9/2011	1423.9	0.0	0.0	9.6	33.0	0.0	1384.4	131.6	6.4	5.6	7.2	0.0	0.0	-68.7
4/10/2011	1410.8	0.4	0.0	8.7	33.0	0.0	1254.2	127.3	6.4	5.6	7.2	0.0	0.0	52.2
4/11/2011	1432.4	1.0	0.0	8.1	33.0	0.0	1315.0	129.7	6.4	5.6	7.2	0.0	0.0	10.6
4/12/2011	1407.0	0.3	0.0	7.9	33.0	0.0	1316.4	129.0	6.4	5.6	7.2	0.0	0.0	-16.5
4/13/2011	1399.5	0.2	0.0	8.9	33.0	0.0	1287.2	128.2	6.4	5.6	7.2	0.0	0.0	6.9
4/14/2011	1296.1	0.7	0.0	9.0	33.0	0.0	1230.4	123.2	6.4	5.6	7.2	0.0	0.0	-34.2
4/15/2011	1214.3	0.2	0.0	8.7	33.0	0.0	1141.1	118.0	6.4	5.6	7.2	0.0	0.0	-22.1
4/16/2011	1210.8	0.1	0.0	7.8	33.0	0.0	1100.5	116.5	6.4	5.6	7.2	0.0	0.0	15.5
4/17/2011	1220.5	0.2	0.0	7.4	33.0	0.0	1103.8	116.8	6.4	5.6	7.2	0.0	0.0	21.3
4/18/2011	1309.8	0.1	0.0	7.3	33.0	0.0	1184.4	122.1	6.4	5.6	7.2	0.0	0.0	24.5
4/19/2011	1445.5	0.2	0.0	5.5	33.0	0.0	1252.3	128.7	6.4	5.6	7.2	0.0	0.0	84.0
4/20/2011	1494.5	0.2	0.0	2.0	33.0	0.0	1335.3	132.0	6.4	5.6	7.2	0.0	0.0	43.2
4/21/2011	1534.2	0.6	0.0	1.9	33.0	0.0	1399.1	135.4	6.4	5.6	7.2	0.0	0.0	15.9
4/22/2011	1433.3	0.5	0.0	1.9	33.0	0.0	1359.9	131.3	6.4	5.6	7.2	0.0	0.0	-41.8
4/23/2011	1231.4	1.1	0.0	3.9	33.0	0.0	1208.3	120.6	6.4	5.6	7.2	0.0	0.0	-78.7
4/24/2011	1036.9	1.3	0.0	6.7	33.0	0.0	1021.9	108.2	6.4	5.6	7.2	0.0	0.0	-71.4
4/25/2011	1031.1	0.1	0.0	4.0	33.0	0.0	926.8	104.5	6.4	5.6	7.2	0.0	0.0	17.6
4/26/2011	1155.1	0.2	0.0	5.3	33.0	0.0	982.5	111.0	6.4	5.6	7.2	0.0	0.0	80.9
4/27/2011	1195.7	0.1	0.0	4.2	33.0	0.0	1056.9	114.1	6.4	5.6	7.2	0.0	0.0	42.7
4/28/2011	1329.7	0.4	0.0	2.8	33.0	0.0	1209.2	124.6	6.4	5.6	7.2	0.0	0.0	12.7
4/29/2011	1044.0	0.2	0.0	1.8	33.0	0.0	1057.1	109.3	6.4	5.6	7.2	0.0	0.0	-106.6
4/30/2011	945.3	0.2	0.0	2.1	33.0	0.0	889.7	100.1	6.4	5.6	7.2	0.0	0.0	-28.5
5/1/2011	889.3	0.6	0.0	2.3	33.0	0.0	793.1	93.0	6.4	8.8	7.2	0.0	0.0	16.6
5/2/2011	880.3	0.5	0.0	2.4	33.0	0.0	836.1	96.4	6.4	8.8	7.2	0.0	0.0	-38.6
5/3/2011	778.9	0.2	0.0	1.9	33.0	0.0	742.5	87.3	6.4	8.8	7.2	0.0	0.0	-38.3
5/4/2011	732.9	0.4	0.0	1.9	33.0	0.0	677.3	82.4	6.4	8.8	7.2	0.0	0.0	-13.9
5/5/2011	694.7	0.3	0.0	1.9	33.0	0.0	647.0	79.3	6.4	8.8	7.2	0.0	0.0	-19.0
5/6/2011	645.4	0.9	0.0	1.9	33.0	0.0	608.7	74.7	6.4	8.8	7.2	0.0	0.0	-24.6
5/7/2011	620.6	0.1	0.0	2.4	33.0	0.0	568.3	71.2	6.4	8.8	7.2	0.0	0.0	-5.9
5/8/2011	631.5	0.5	0.0	2.1	33.0	0.0	553.7	71.2	6.4	8.8	7.2	0.0	0.0	19.8
5/9/2011	674.1	0.6	0.0	1.9	33.0	0.0	562.4	72.4	6.4	8.8	7.2	0.0	0.0	52.4
5/10/2011	1060.6	0.4	0.0	1.9	33.0	0.0	655.8	94.8	6.4	8.8	7.2	0.0	0.0	322.9
5/11/2011	1114.8	0.2	0.0	1.9	33.0	0.0	1004.5	110.0	6.4	8.8	7.2	0.0	0.0	12.9
5/12/2011	1265.5	0.1	0.0	1.8	33.0	0.0	1068.6	117.1	6.4	8.8	7.2	0.0	0.0	92.2
5/13/2011	1349.9	0.2	0.0	1.9	33.0	0.0	1203.4	124.2	6.4	8.8	7.2	0.0	0.0	34.9
5/14/2011	1222.7	0.8	0.0	1.9	33.0	0.0	1167.4	118.9	6.4	8.8	7.2	0.0	0.0	-50.5
5/15/2011	1122.2	0.8	0.0	1.8	33.0	0.0	1058.9	112.2	6.4	8.8	7.2	0.0	0.0	-35.7
5/16/2011	1109.5	0.7	0.0	1.8	33.0	0.0	1002.6	109.9	6.4	8.8	7.2	0.0	0.0	10.1
5/17/2011	1108.9	1.5	0.0	1.8	33.0	0.0	1000.4	109.7	6.4	8.8	7.2	0.0	0.0	12.7
5/18/2011	1213.6	1.0	0.0	1.8	33.0	0.0	1040.9	114.4	6.4	8.8	7.2	0.0	0.0	71.7
5/19/2011	1410.7	0.5	0.0	1.8	33.0	0.0	1200.2	125.7	6.4	8.8	7.2	0.0	0.0	97.7
5/20/2011	1484.6	1.2	0.0	2.9	33.0	0.0	1343.8	132.5	6.4	8.8	7.2	0.0	0.0	23.0



Table F1-4: RGCP Channel Water Budget Equation Analysis Segment 4														
2010-12 Study Period														
(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
	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, above American Dam	Channel Seepage	MODFLOW Floodplain Recharge	Open Water Channel Evaporation	MODFLOW Riparian Evapo-transpiration	Diversions Authorized (None)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
Date														
5/21/2011	1351.5	0.4	0.0	1.8	33.0	0.0	1286.2	126.5	6.4	8.8	7.2	0.0	0.0	-48.3
5/22/2011	1251.2	1.5	0.0	1.9	33.0	0.0	1180.6	120.4	6.4	8.8	7.2	0.0	0.0	-35.9
5/23/2011	1081.3	1.1	0.0	1.9	33.0	0.0	1057.2	110.8	6.4	8.8	7.2	0.0	0.0	-73.2
5/24/2011	966.8	0.4	0.0	2.0	33.0	0.0	925.7	102.2	6.4	8.8	7.2	0.0	0.0	-48.3
5/25/2011	939.4	0.1	0.0	1.9	33.0	0.0	846.3	98.1	6.4	8.8	7.2	0.0	0.0	7.6
5/26/2011	905.7	0.5	0.0	1.9	33.0	0.0	835.4	96.4	6.4	8.8	7.2	0.0	0.0	-13.2
5/27/2011	855.7	1.3	0.0	1.9	33.0	0.0	794.4	92.9	6.4	8.8	7.2	0.0	0.0	-17.9
5/28/2011	834.0	0.2	0.0	1.9	33.0	0.0	751.7	90.0	6.4	8.8	7.2	0.0	0.0	4.9
5/29/2011	901.2	0.4	0.0	1.9	33.0	0.0	751.5	92.5	6.4	8.8	7.2	0.0	0.0	70.0
5/30/2011	1101.7	0.5	0.0	1.9	33.0	0.0	873.5	104.9	6.4	8.8	7.2	0.0	0.0	136.3
5/31/2011	1293.0	0.5	0.0	1.8	33.0	0.0	1087.8	118.7	6.4	8.8	7.2	0.0	0.0	99.4
6/1/2011	1382.4	1.2	0.0	1.8	33.0	0.0	1223.6	123.9	6.4	9.1	7.2	0.0	0.0	48.3
6/2/2011	1617.2	1.3	0.0	1.8	33.0	0.0	1545.5	142.6	6.4	9.1	7.2	0.0	0.0	-57.6
6/3/2011	1407.1	0.6	0.0	1.8	33.0	0.0	1338.4	130.1	6.4	9.1	7.2	0.0	0.0	-48.6
6/4/2011	1285.0	0.5	0.0	1.9	33.0	0.0	1200.4	121.6	6.4	9.1	7.2	0.0	0.0	-24.3
6/5/2011	1230.2	0.4	0.0	10.0	33.0	0.0	1151.1	118.4	6.4	9.1	7.2	0.0	0.0	-18.6
6/6/2011	1243.2	0.3	0.0	13.2	33.0	0.0	1116.3	118.2	6.4	9.1	7.2	0.0	0.0	32.5
6/7/2011	1239.9	0.8	0.0	5.8	33.0	0.0	1143.8	119.0	6.4	9.1	7.2	0.0	0.0	-6.1
6/8/2011	1216.7	0.9	0.0	10.5	33.0	0.0	1098.1	116.3	6.4	9.1	7.2	0.0	0.0	24.1
6/9/2011	1326.3	0.6	0.0	5.6	33.0	0.0	1156.1	121.5	6.4	9.1	7.2	0.0	0.0	65.1
6/10/2011	1376.9	1.7	0.0	5.6	33.0	0.0	1271.7	127.4	6.4	9.1	7.2	0.0	0.0	-4.6
6/11/2011	1270.1	0.7	0.0	1.8	33.0	0.0	1196.3	121.2	6.4	9.1	7.2	0.0	0.0	-34.6
6/12/2011	1261.7	0.9	0.0	2.2	33.0	0.0	1129.0	118.5	6.4	9.1	7.2	0.0	0.0	27.6
6/13/2011	1332.2	1.1	0.0	1.4	33.0	0.0	1191.6	123.1	6.4	9.1	7.2	0.0	0.0	30.3
6/14/2011	1380.9	1.0	0.0	1.0	33.0	0.0	1219.5	125.1	6.4	9.1	7.2	0.0	0.0	48.6
6/15/2011	1411.7	1.1	0.0	1.5	33.0	0.0	1297.9	128.7	6.4	9.1	7.2	0.0	0.0	-2.1
6/16/2011	1364.3	1.6	0.0	1.5	33.0	0.0	1257.8	126.0	6.4	9.1	7.2	0.0	0.0	-6.0
6/17/2011	1358.5	1.8	0.0	2.5	33.0	0.0	1232.9	125.3	6.4	9.1	7.2	0.0	0.0	14.9
6/18/2011	1257.7	1.1	0.0	1.8	33.0	0.0	1210.6	121.6	6.4	9.1	7.2	0.0	0.0	-61.4
6/19/2011	1132.8	0.9	0.0	1.8	33.0	0.0	1053.6	111.9	6.4	9.1	7.2	0.0	0.0	-19.8
6/20/2011	1154.8	1.8	0.0	1.9	33.0	0.0	1037.2	112.4	6.4	9.1	7.2	0.0	0.0	19.1
6/21/2011	1240.4	0.8	0.0	1.8	33.0	0.0	1064.7	115.4	6.4	9.1	7.2	0.0	0.0	73.2
6/22/2011	1422.4	0.5	0.0	1.8	33.0	0.0	1257.1	128.0	6.4	9.1	7.2	0.0	0.0	49.9
6/23/2011	1428.9	1.1	0.0	2.3	33.0	0.0	1302.0	129.3	6.4	9.1	7.2	0.0	0.0	11.2
6/24/2011	1406.1	0.8	0.0	3.9	33.0	0.0	1292.3	128.4	6.4	9.1	7.2	0.0	0.0	0.3
6/25/2011	1325.6	1.5	0.0	7.0	33.0	0.0	1250.6	124.6	6.4	9.1	7.2	0.0	0.0	-30.7
6/26/2011	1352.0	1.4	0.0	5.7	33.0	0.0	1189.3	123.3	6.4	9.1	7.2	0.0	0.0	56.7
6/27/2011	1473.0	2.7	0.0	3.3	33.0	0.0	1301.0	130.5	6.4	9.1	7.2	0.0	0.0	57.7
6/28/2011	1556.6	4.2	0.0	4.8	33.0	0.0	1399.1	135.9	6.4	9.1	7.2	0.0	0.0	40.9
6/29/2011	1530.7	3.8	0.0	5.2	33.0	0.0	1422.0	135.6	6.4	9.1	7.2	0.0	0.0	-7.6
6/30/2011	1553.0	1.8	0.0	1.6	33.0	0.0	1387.4	135.1	6.4	9.1	7.2	0.0	0.0	44.2
7/1/2011	1586.7	3.8	0.0	2.3	33.0	0.0	1462.7	138.5	6.4	6.8	7.2	0.0	0.0	4.3
7/2/2011	1553.2	2.0	0.0	1.3	33.0	0.0	1432.4	136.6	6.4	6.8	7.2	0.0	0.0	0.1
7/3/2011	1514.5	1.5	0.0	1.9	33.0	0.0	1397.3	134.5	6.4	6.8	7.2	0.0	0.0	-1.4
7/4/2011	1486.7	4.4	0.0	18.5	33.0	0.0	1376.0	133.1	6.4	6.8	7.2	0.0	0.0	13.1
7/5/2011	1409.5	2.8	0.0	17.7	33.0	0.0	1354.9	130.5	6.4	6.8	7.2	0.0	0.0	-42.7
7/6/2011	1312.8	3.8	0.0	4.0	33.0	0.0	1225.7	123.5	6.4	6.8	7.2	0.0	0.0	-15.9
7/7/2011	1330.5	2.2	0.0	6.9	33.0	0.0	1191.9	123.4	6.4	6.8	7.2	0.0	0.0	37.0
7/8/2011	1435.2	3.6	0.0	5.3	33.0	0.0	1265.4	128.6	6.4	6.8	7.2	0.0	0.0	62.7
7/9/2011	1263.8	2.6	0.0	4.0	33.0	0.0	1266.6	122.9	6.4	6.8	7.2	0.0	0.0	-106.5
7/10/2011	1143.1	2.4	0.0	2.2	33.0	0.0	1084.8	113.8	6.4	6.8	7.2	0.0	0.0	-38.3



Table F1-4: RGCP Channel Water Budget Equation Analysis Segment 4

2010-12 Study Period

(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
	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, above American Dam	Channel Seepage	MODFLOW Floodplain Recharge	Open Water Channel Evaporation	MODFLOW Riparian Evapo- transpiration	Diversions Authorized (None)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
Date														
7/11/2011	1065.5	2.1	0.0	1.9	33.0	0.0	986.1	107.6	6.4	6.8	7.2	0.0	0.0	-11.5
7/12/2011	1124.2	2.4	0.0	1.8	33.0	0.0	979.8	109.5	6.4	6.8	7.2	0.0	0.0	51.7
7/13/2011	1168.3	2.8	0.0	1.8	33.0	0.0	1046.7	113.3	6.4	6.8	7.2	0.0	0.0	25.5
7/14/2011	1184.9	3.3	0.0	1.4	33.0	0.0	1063.4	114.3	6.4	6.8	7.2	0.0	0.0	24.6
7/15/2011	1176.5	3.3	0.0	5.3	33.0	0.0	1080.7	115.0	6.4	6.8	7.2	0.0	0.0	2.0
7/16/2011	1046.2	1.9	0.0	4.8	33.0	0.0	1005.3	107.8	6.4	6.8	7.2	0.0	0.0	-47.6
7/17/2011	1062.8	2.7	0.0	3.7	33.0	0.0	938.5	105.8	6.4	6.8	7.2	0.0	0.0	37.6
7/18/2011	1220.4	2.2	0.0	2.4	33.0	0.0	1027.2	114.4	6.4	6.8	7.2	0.0	0.0	96.1
7/19/2011	1315.1	1.8	0.0	10.4	33.0	0.0	1149.7	120.9	6.4	6.8	7.2	0.0	0.0	69.4
7/20/2011	1502.8	2.9	0.0	20.8	33.0	0.0	1317.6	131.7	6.4	6.8	7.2	0.0	0.0	89.8
7/21/2011	1614.3	2.5	0.0	16.5	33.0	0.0	1475.7	139.9	6.4	6.8	7.2	0.0	0.0	30.3
7/22/2011	1565.8	2.8	0.0	20.5	33.0	0.0	1471.1	138.3	6.4	6.8	7.2	0.0	0.0	-7.7
7/23/2011	1444.1	3.0	0.0	18.0	33.0	0.0	1382.3	132.1	6.4	6.8	7.2	0.0	0.0	-36.6
7/24/2011	1331.7	3.1	0.0	12.4	33.0	0.0	1272.3	125.2	6.4	6.8	7.2	0.0	0.0	-37.7
7/25/2011	1318.7	1.4	0.0	12.6	33.0	0.0	1207.3	123.1	6.4	6.8	7.2	0.0	0.0	14.9
7/26/2011	1303.3	4.6	0.0	14.4	33.0	0.0	1199.2	122.3	6.4	6.8	7.2	0.0	0.0	13.4
7/27/2011	1314.6	3.2	0.0	13.3	33.0	0.0	1192.5	122.3	6.4	6.8	7.2	0.0	0.0	29.0
7/28/2011	1368.9	3.4	0.0	13.6	33.0	0.0	1238.2	125.4	6.4	6.8	7.2	0.0	0.0	35.0
7/29/2011	1349.3	3.2	0.0	14.3	33.0	0.0	1278.7	127.0	6.4	6.8	7.2	0.0	0.0	-26.3
7/30/2011	989.4	2.8	38.1	14.9	33.0	0.0	1075.4	108.1	6.4	6.8	7.2	0.0	0.0	-125.6
7/31/2011	959.1	2.1	0.0	14.4	33.0	0.0	881.4	100.3	6.4	6.8	7.2	0.0	0.0	6.7
8/1/2011	1247.0	4.1	0.0	13.9	33.0	0.0	850.7	107.4	6.4	6.4	7.2	0.0	0.0	319.9
8/2/2011	1509.2	3.3	0.0	17.5	33.0	0.0	1378.8	133.5	6.4	6.4	7.2	0.0	0.0	30.7
8/3/2011	1600.9	1.8	0.0	25.0	33.0	0.0	1460.0	138.8	6.4	6.4	7.2	0.0	0.0	41.8
8/4/2011	1542.3	3.2	0.0	15.9	33.0	0.0	1457.2	137.1	6.4	6.4	7.2	0.0	0.0	-19.8
8/5/2011	1422.7	2.3	0.0	13.5	33.0	0.0	1351.3	130.3	6.4	6.4	7.2	0.0	0.0	-30.0
8/6/2011	1417.2	2.8	0.0	13.3	33.0	0.0	1299.5	128.6	6.4	6.4	7.2	0.0	0.0	18.2
8/7/2011	1455.0	3.1	0.0	13.2	33.0	0.0	1320.0	130.4	6.4	6.4	7.2	0.0	0.0	34.0
8/8/2011	1503.8	2.6	0.0	13.1	33.0	0.0	1368.9	133.4	6.4	6.4	7.2	0.0	0.0	30.3
8/9/2011	1483.5	2.0	0.0	14.3	33.0	0.0	1374.5	132.9	6.4	6.4	7.2	0.0	0.0	5.4
8/10/2011	1464.0	3.4	0.0	12.3	33.0	0.0	1353.7	131.7	6.4	6.4	7.2	0.0	0.0	7.5
8/11/2011	1448.4	3.2	0.0	12.5	33.0	0.0	1334.0	130.6	6.4	6.4	7.2	0.0	0.0	12.6
8/12/2011	1481.0	5.4	0.0	13.7	33.0	0.0	1346.7	131.9	6.4	6.4	7.2	0.0	0.0	34.4
8/13/2011	1530.3	3.9	0.0	14.1	33.0	0.0	1390.1	134.6	6.4	6.4	7.2	0.0	0.0	36.6
8/14/2011	1562.3	3.7	0.0	14.2	33.0	0.0	1426.4	136.6	6.4	6.4	7.2	0.0	0.0	30.3
8/15/2011	1588.6	2.1	0.0	14.6	33.0	0.0	1457.4	138.2	6.4	6.4	7.2	0.0	0.0	22.6
8/16/2011	1573.5	3.4	0.0	15.3	33.0	0.0	1458.0	137.9	6.4	6.4	7.2	0.0	0.0	9.4
8/17/2011	1554.4	3.1	0.0	13.6	33.0	0.0	1438.1	136.7	6.4	6.4	7.2	0.0	0.0	9.4
8/18/2011	1574.4	2.7	0.0	14.4	33.0	0.0	1440.8	137.3	6.4	6.4	7.2	0.0	0.0	26.5
8/19/2011	1589.9	5.0	0.0	15.5	33.0	0.0	1464.5	138.5	6.4	6.4	7.2	0.0	0.0	20.4
8/20/2011	1589.3	1.9	0.0	16.6	33.0	0.0	1466.9	138.5	6.4	6.4	7.2	0.0	0.0	15.5
8/21/2011	1576.7	1.5	0.0	16.0	33.0	0.0	1461.7	138.0	6.4	6.4	7.2	0.0	0.0	7.5
8/22/2011	1573.2	1.8	0.0	16.4	33.0	0.0	1452.5	137.6	6.4	6.4	7.2	0.0	0.0	14.3
8/23/2011	1568.7	3.8	0.0	16.9	33.0	0.0	1450.5	137.4	6.4	6.4	7.2	0.0	0.0	14.4
8/24/2011	1562.7	2.3	0.0	16.8	33.0	0.0	1443.8	137.0	6.4	6.4	7.2	0.0	0.0	13.9
8/25/2011	1591.2	1.0	0.0	24.3	33.0	0.0	1453.2	138.0	6.4	6.4	7.2	0.0	0.0	38.3
8/26/2011	1709.0	2.5	0.0	16.3	33.0	0.0	1542.6	143.9	6.4	6.4	7.2	0.0	0.0	54.3
8/27/2011	1734.2	0.9	0.0	17.6	33.0	0.0	1613.1	146.7	6.4	6.4	7.2	0.0	0.0	6.0
8/28/2011	1639.7	1.2	0.0	16.4	33.0	0.0	1552.3	142.2	6.4	6.4	7.2	0.0	0.0	-24.2
8/29/2011	1570.3	2.2	0.0	16.7	33.0	0.0	1471.6	138.0	6.4	6.4	7.2	0.0	0.0	-7.3
8/30/2011	1560.3	1.3	0.0	17.0	33.0	0.0	1444.4	137.0	6.4	6.4	7.2	0.0	0.0	10.2

Table F1-4: RGCP Channel Water Budget Equation Analysis Segment 4

2010-12 Study Period

(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, above American Dam	Channel Seepage	MODFLOW Floodplain Recharge	Open Water Channel Evaporation	MODFLOW Riparian Evapo-transpiration	Diversions Authorized (None)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
8/31/2011	1515.0	3.0	0.0	20.1	33.0	0.0	1437.7	136.0	6.4	6.4	7.2	0.0	0.0	-22.6
9/1/2011	1288.4	2.2	0.0	18.0	33.0	0.0	1281.0	124.3	6.4	5.1	7.2	0.0	0.0	-82.5
9/2/2011	1154.7	3.4	0.0	17.5	33.0	0.0	1110.6	114.7	6.4	5.1	7.2	0.0	0.0	-35.5
9/3/2011	1447.5	2.1	0.0	17.2	33.0	0.0	1186.8	126.3	6.4	5.1	7.2	0.0	0.0	168.1
9/4/2011	1611.7	2.5	0.0	17.1	33.0	0.0	1440.5	138.6	6.4	5.1	7.2	0.0	0.0	66.5
9/5/2011	1620.1	5.3	0.0	16.8	33.0	0.0	1495.3	140.1	6.4	5.1	7.2	0.0	0.0	21.1
9/6/2011	1644.1	3.6	0.0	16.7	33.0	0.0	1507.5	141.1	6.4	5.1	7.2	0.0	0.0	30.0
9/7/2011	1642.9	3.0	0.0	16.8	33.0	0.0	1521.8	141.4	6.4	5.1	7.2	0.0	0.0	13.7
9/8/2011	1649.9	2.5	0.0	16.8	33.0	0.0	1521.3	141.6	6.4	5.1	7.2	0.0	0.0	20.5
9/9/2011	1662.3	0.8	0.0	16.6	33.0	0.0	1531.8	142.3	6.4	5.1	7.2	0.0	0.0	19.9
9/10/2011	1668.2	3.6	0.0	16.7	33.0	0.0	1543.0	142.8	6.4	5.1	7.2	0.0	0.0	17.1
9/11/2011	1514.6	4.9	0.0	16.5	33.0	0.0	1529.0	139.5	6.4	5.1	7.2	0.0	0.0	-118.3
9/12/2011	908.0	3.0	130.6	16.2	33.0	0.0	1087.8	106.1	6.4	5.1	7.2	0.0	0.0	-121.8
9/13/2011	204.9	1.9	121.7	16.2	33.0	0.0	375.8	75.6	6.4	5.1	7.2	0.0	0.0	-92.4
9/14/2011	57.5	2.2	70.2	0.0	33.0	0.0	160.7	56.9	6.4	5.1	7.2	0.0	0.0	-73.4
9/15/2011	9.0	1.9	6.1	17.4	33.0	0.0	65.5	9.0	6.4	5.1	7.2	0.0	0.0	-25.9
9/16/2011	6.5	2.0	0.0	19.3	33.0	0.0	37.2	6.5	6.4	5.1	7.2	0.0	0.0	-1.7
9/17/2011	6.3	1.6	0.0	16.7	33.0	0.0	34.8	6.3	6.4	5.1	7.2	0.0	0.0	-2.3
9/18/2011	6.2	2.0	0.0	16.6	33.0	0.0	33.7	6.2	6.4	5.1	7.2	0.0	0.0	-0.8
9/19/2011	6.3	2.2	0.0	17.0	33.0	0.0	33.9	6.3	6.4	5.1	7.2	0.0	0.0	-0.5
9/20/2011	7.4	3.4	0.0	17.3	33.0	0.0	34.2	7.4	6.4	5.1	7.2	0.0	0.0	0.7
9/21/2011	10.3	1.9	0.0	16.8	33.0	0.0	35.3	10.3	6.4	5.1	7.2	0.0	0.0	-2.5
9/22/2011	10.9	3.9	0.0	16.5	33.0	0.0	37.7	10.9	6.4	5.1	7.2	0.0	0.0	-3.1
9/23/2011	9.2	3.9	0.0	16.8	33.0	0.0	37.8	9.2	6.4	5.1	7.2	0.0	0.0	-2.9
9/24/2011	7.4	2.4	0.0	16.8	33.0	0.0	36.2	7.4	6.4	5.1	7.2	0.0	0.0	-2.8
9/25/2011	6.3	3.2	0.0	17.2	33.0	0.0	34.8	6.3	6.4	5.1	7.2	0.0	0.0	-0.1
9/26/2011	6.1	0.5	0.0	17.5	33.0	0.0	34.4	6.1	6.4	5.1	7.2	0.0	0.0	-2.1
9/27/2011	6.1	2.5	0.0	17.4	33.0	0.0	34.2	6.1	6.4	5.1	7.2	0.0	0.0	-0.1
9/28/2011	6.2	0.9	0.0	17.2	33.0	0.0	34.2	6.2	6.4	5.1	7.2	0.0	0.0	-1.8
9/29/2011	6.2	0.2	0.0	17.1	33.0	0.0	34.0	6.2	6.4	5.1	7.2	0.0	0.0	-2.5
9/30/2011	6.1	3.0	0.0	17.2	33.0	0.0	34.0	6.1	6.4	5.1	7.2	0.0	0.0	0.5
10/1/2011	6.2	1.2	0.0	17.1	33.0	0.0	34.1	6.2	6.4	0.0	7.2	0.0	0.0	3.6
10/2/2011	6.1	1.2	0.0	17.1	33.0	0.0	33.9	6.1	6.4	0.0	7.2	0.0	0.0	3.8
10/3/2011	6.1	1.9	0.0	17.6	33.0	0.0	34.3	6.1	6.4	0.0	7.2	0.0	0.0	4.5
10/4/2011	6.2	2.0	0.0	17.4	33.0	0.0	34.3	6.2	6.4	0.0	7.2	0.0	0.0	4.5
10/5/2011	6.1	1.1	0.0	16.7	33.0	0.0	33.8	6.1	6.4	0.0	7.2	0.0	0.0	3.5
10/6/2011	6.1	0.2	0.0	16.6	33.0	0.0	33.5	6.1	6.4	0.0	7.2	0.0	0.0	2.8
10/7/2011	6.1	0.5	0.0	16.7	33.0	0.0	33.6	6.1	6.4	0.0	7.2	0.0	0.0	3.0
10/8/2011	6.1	0.5	0.0	16.6	33.0	0.0	33.5	6.1	6.4	0.0	7.2	0.0	0.0	3.0
10/9/2011	6.1	0.7	0.0	16.8	33.0	0.0	33.6	6.1	6.4	0.0	7.2	0.0	0.0	3.3
10/10/2011	6.1	0.8	0.0	16.7	33.0	0.0	33.6	6.1	6.4	0.0	7.2	0.0	0.0	3.3
10/11/2011	6.0	1.3	0.0	16.7	33.0	0.0	33.6	6.0	6.4	0.0	7.2	0.0	0.0	3.8
10/12/2011	6.1	0.5	0.0	16.8	33.0	0.0	33.7	6.1	6.4	0.0	7.2	0.0	0.0	3.0
10/13/2011	6.2	1.6	0.0	16.7	33.0	0.0	33.6	6.2	6.4	0.0	7.2	0.0	0.0	4.1
10/14/2011	6.1	0.9	0.0	16.7	33.0	0.0	33.7	6.1	6.4	0.0	7.2	0.0	0.0	3.4
10/15/2011	6.1	0.9	0.0	16.7	33.0	0.0	33.6	6.1	6.4	0.0	7.2	0.0	0.0	3.4
10/16/2011	6.1	1.1	0.0	17.2	33.0	0.0	34.0	6.1	6.4	0.0	7.2	0.0	0.0	3.7
10/17/2011	6.1	1.4	0.0	17.4	33.0	0.0	34.2	6.1	6.4	0.0	7.2	0.0	0.0	4.0
10/18/2011	6.1	1.2	0.0	17.6	33.0	0.0	34.3	6.1	6.4	0.0	7.2	0.0	0.0	3.9
10/19/2011	6.1	0.8	0.0	17.7	33.0	0.0	34.5	6.1	6.4	0.0	7.2	0.0	0.0	3.3
10/20/2011	6.1	1.0	0.0	17.7	33.0	0.0	34.6	6.1	6.4	0.0	7.2	0.0	0.0	3.6

Table F1-4: RGCP Channel Water Budget Equation Analysis Segment 4														
2010-12 Study Period														
(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
	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, above American Dam	Channel Seepage	MODFLOW Floodplain Recharge	Open Water Channel Evaporation	MODFLOW Riparian Evapo-transpiration	Diversions Authorized (None)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
Date														
10/21/2011	6.0	1.4	0.0	17.8	33.0	0.0	34.6	6.0	6.4	0.0	7.2	0.0	0.0	4.0
10/22/2011	6.1	2.0	0.0	17.9	33.0	0.0	34.8	6.1	6.4	0.0	7.2	0.0	0.0	4.5
10/23/2011	6.1	1.9	0.0	19.7	33.0	0.0	35.9	6.1	6.4	0.0	7.2	0.0	0.0	5.0
10/24/2011	6.2	1.1	0.0	19.7	33.0	0.0	36.5	6.2	6.4	0.0	7.2	0.0	0.0	3.7
10/25/2011	6.1	1.5	0.0	20.2	33.0	0.0	36.8	6.1	6.4	0.0	7.2	0.0	0.0	4.3
10/26/2011	6.1	1.1	0.0	18.2	33.0	0.0	35.6	6.1	6.4	0.0	7.2	0.0	0.0	3.1
10/27/2011	6.1	1.4	0.0	17.9	33.0	0.0	34.8	6.1	6.4	0.0	7.2	0.0	0.0	3.8
10/28/2011	6.1	1.6	0.0	18.0	33.0	0.0	34.8	6.1	6.4	0.0	7.2	0.0	0.0	4.2
10/29/2011	6.3	1.2	0.0	17.6	33.0	0.0	34.6	6.3	6.4	0.0	7.2	0.0	0.0	3.6
10/30/2011	6.2	0.9	0.0	17.5	33.0	0.0	34.5	6.2	6.4	0.0	7.2	0.0	0.0	3.3
10/31/2011	6.2	0.8	0.0	17.6	33.0	0.0	34.6	6.2	6.4	0.0	7.2	0.0	0.0	3.2
11/1/2011	6.3	0.2	0.0	17.5	33.0	0.8	34.5	6.3	0.1	0.0	2.5	0.0	0.0	14.4
11/2/2011	6.3	0.7	0.0	17.5	33.0	0.8	34.6	6.3	0.1	0.0	2.5	0.0	0.0	14.9
11/3/2011	6.3	1.0	0.0	17.7	33.0	0.8	34.7	6.3	0.1	0.0	2.5	0.0	0.0	15.2
11/4/2011	6.5	0.5	0.0	18.6	33.0	0.8	35.5	6.5	0.1	0.0	2.5	0.0	0.0	14.8
11/5/2011	6.6	0.1	0.0	19.6	33.0	0.8	36.4	6.6	0.1	0.0	2.5	0.0	0.0	14.4
11/6/2011	6.7	0.8	0.0	18.7	33.0	0.8	36.2	6.7	0.1	0.0	2.5	0.0	0.0	14.4
11/7/2011	6.8	0.8	0.0	18.8	33.0	0.8	36.2	6.8	0.1	0.0	2.5	0.0	0.0	14.6
11/8/2011	6.8	0.9	0.0	18.9	33.0	0.8	36.2	6.8	0.1	0.0	2.5	0.0	0.0	14.8
11/9/2011	7.0	0.2	0.0	19.1	33.0	0.8	36.5	7.0	0.1	0.0	2.5	0.0	0.0	14.0
11/10/2011	7.1	0.4	0.0	18.7	33.0	0.8	36.4	7.1	0.1	0.0	2.5	0.0	0.0	13.8
11/11/2011	7.1	0.8	0.0	19.1	33.0	0.8	36.6	7.1	0.1	0.0	2.5	0.0	0.0	14.5
11/12/2011	7.2	0.9	0.0	19.2	33.0	0.8	37.0	7.2	0.1	0.0	2.5	0.0	0.0	14.3
11/13/2011	7.4	1.8	0.0	19.3	33.0	0.8	37.0	7.4	0.1	0.0	2.5	0.0	0.0	15.2
11/14/2011	7.5	1.7	0.0	19.2	33.0	0.8	37.2	7.5	0.1	0.0	2.5	0.0	0.0	14.8
11/15/2011	7.5	1.5	0.0	19.2	33.0	0.8	37.3	7.5	0.1	0.0	2.5	0.0	0.0	14.6
11/16/2011	7.7	0.6	0.0	19.2	33.0	0.8	37.3	7.7	0.1	0.0	2.5	0.0	0.0	13.7
11/17/2011	7.7	0.3	0.0	19.2	33.0	0.8	37.3	7.7	0.1	0.0	2.5	0.0	0.0	13.3
11/18/2011	7.6	0.5	0.0	19.4	33.0	0.8	37.5	7.6	0.1	0.0	2.5	0.0	0.0	13.6
11/19/2011	7.5	0.1	0.0	19.2	33.0	0.8	37.4	7.5	0.1	0.0	2.5	0.0	0.0	13.0
11/20/2011	7.5	0.3	0.0	19.4	33.0	0.8	37.4	7.5	0.1	0.0	2.5	0.0	0.0	13.4
11/21/2011	7.6	0.5	0.0	19.7	33.0	0.8	37.7	7.6	0.1	0.0	2.5	0.0	0.0	13.7
11/22/2011	7.6	0.7	0.0	19.7	33.0	0.8	37.8	7.6	0.1	0.0	2.5	0.0	0.0	13.7
11/23/2011	7.6	0.3	0.0	20.2	33.0	0.8	38.2	7.6	0.1	0.0	2.5	0.0	0.0	13.5
11/24/2011	7.7	1.0	0.0	20.0	33.0	0.8	38.3	7.7	0.1	0.0	2.5	0.0	0.0	13.9
11/25/2011	7.7	0.4	0.0	20.0	33.0	0.8	38.3	7.7	0.1	0.0	2.5	0.0	0.0	13.3
11/26/2011	7.8	1.2	0.0	19.5	33.0	0.8	37.8	7.8	0.1	0.0	2.5	0.0	0.0	14.1
11/27/2011	7.7	0.9	0.0	19.3	33.0	0.8	37.6	7.7	0.1	0.0	2.5	0.0	0.0	13.7
11/28/2011	7.8	0.7	0.0	18.8	33.0	0.8	37.2	7.8	0.1	0.0	2.5	0.0	0.0	13.4
11/29/2011	7.8	0.7	0.0	18.6	33.0	0.8	37.0	7.8	0.1	0.0	2.5	0.0	0.0	13.5
11/30/2011	7.8	0.9	0.0	18.7	33.0	0.8	36.9	7.8	0.1	0.0	2.5	0.0	0.0	13.9
12/1/2011	7.8	1.4	0.0	18.8	33.0	0.8	37.0	7.8	0.1	0.0	2.5	0.0	0.0	14.3
12/2/2011	7.8	1.0	0.0	19.2	33.0	0.8	37.3	7.8	0.1	0.0	2.5	0.0	0.0	14.1
12/3/2011	7.7	1.3	0.0	19.4	33.0	0.8	37.6	7.7	0.1	0.0	2.5	0.0	0.0	14.3
12/4/2011	7.8	1.0	0.0	19.6	33.0	0.8	37.8	7.8	0.1	0.0	2.5	0.0	0.0	13.9
12/5/2011	7.9	0.8	0.0	19.4	33.0	0.8	37.8	7.9	0.1	0.0	2.5	0.0	0.0	13.6
12/6/2011	7.3	0.1	0.0	0.0	33.0	0.8	24.8	7.3	0.1	0.0	2.5	0.0	0.0	6.5
12/7/2011	7.6	1.4	0.0	19.1	33.0	0.8	31.1	7.6	0.1	0.0	2.5	0.0	0.0	20.5
12/8/2011	8.0	1.4	0.0	19.3	33.0	0.8	37.4	8.0	0.1	0.0	2.5	0.0	0.0	14.4
12/9/2011	8.0	1.6	0.0	19.4	33.0	0.8	37.8	8.0	0.1	0.0	2.5	0.0	0.0	14.4
12/10/2011	7.8	1.0	0.0	19.7	33.0	0.8	38.1	7.8	0.1	0.0	2.5	0.0	0.0	13.8

Table F1-4: RGCP Channel Water Budget Equation Analysis Segment 4

2010-12 Study Period

(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
	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, above American Dam	Channel Seepage	MODFLOW Floodplain Recharge	Open Water Channel Evaporation	MODFLOW Riparian Evapo- transpiration	Diversions Authorized (None)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
Date														
12/11/2011	7.9	1.0	0.0	20.1	33.0	0.8	38.3	7.9	0.1	0.0	2.5	0.0	0.0	13.9
12/12/2011	7.9	0.2	0.0	17.6	33.0	0.8	36.7	7.9	0.1	0.0	2.5	0.0	0.0	12.2
12/13/2011	7.8	2.2	0.0	15.3	33.0	0.8	34.5	7.8	0.1	0.0	2.5	0.0	0.0	14.2
12/14/2011	7.9	1.5	0.0	8.9	33.0	0.8	29.6	7.9	0.1	0.0	2.5	0.0	0.0	12.0
12/15/2011	7.9	0.2	0.0	8.6	33.0	0.8	27.4	7.9	0.1	0.0	2.5	0.0	0.0	12.5
12/16/2011	7.9	0.4	0.0	14.0	33.0	0.8	31.0	7.9	0.1	0.0	2.5	0.0	0.0	14.6
12/17/2011	7.9	0.7	0.0	19.4	33.0	0.8	36.2	7.9	0.1	0.0	2.5	0.0	0.0	15.0
12/18/2011	7.9	1.5	0.0	19.7	33.0	0.8	37.9	7.9	0.1	0.0	2.5	0.0	0.0	14.4
12/19/2011	7.8	0.5	0.0	20.5	33.0	0.8	38.6	7.8	0.1	0.0	2.5	0.0	0.0	13.6
12/20/2011	7.8	0.5	0.0	19.8	33.0	0.8	38.3	7.8	0.1	0.0	2.5	0.0	0.0	13.1
12/21/2011	7.8	1.5	0.0	19.9	33.0	0.8	38.2	7.8	0.1	0.0	2.5	0.0	0.0	14.4
12/22/2011	7.8	1.1	0.0	19.7	33.0	0.8	38.1	7.8	0.1	0.0	2.5	0.0	0.0	13.9
12/23/2011	7.8	1.7	0.0	19.9	33.0	0.8	38.1	7.8	0.1	0.0	2.5	0.0	0.0	14.6
12/24/2011	7.8	0.6	0.0	20.0	33.0	0.8	38.3	7.8	0.1	0.0	2.5	0.0	0.0	13.5
12/25/2011	7.8	1.6	0.0	19.9	33.0	0.8	38.4	7.8	0.1	0.0	2.5	0.0	0.0	14.3
12/26/2011	7.9	1.5	0.0	20.0	33.0	0.8	38.3	7.9	0.1	0.0	2.5	0.0	0.0	14.3
12/27/2011	8.0	0.2	0.0	20.1	33.0	0.8	38.4	8.0	0.1	0.0	2.5	0.0	0.0	13.1
12/28/2011	8.0	0.7	0.0	20.2	33.0	0.8	38.6	8.0	0.1	0.0	2.5	0.0	0.0	13.4
12/29/2011	8.2	1.4	0.0	20.1	33.0	0.8	38.6	8.2	0.1	0.0	2.5	0.0	0.0	14.0
12/30/2011	8.4	0.7	0.0	20.0	33.0	0.8	38.7	8.4	0.1	0.0	2.5	0.0	0.0	13.1
12/31/2011	8.4	0.9	0.0	19.1	33.0	0.8	38.3	8.4	0.1	0.0	2.5	0.0	0.0	12.9
1/1/2012	8.0	0.3	0.0	19.7	33.0	0.8	38.1	8.0	0.1	0.0	2.5	0.0	0.0	13.0
1/2/2012	7.9	0.9	0.0	19.6	33.0	0.8	38.0	7.9	0.1	0.0	2.5	0.0	0.0	13.7
1/3/2012	7.8	0.5	0.0	19.8	33.0	0.8	38.1	7.8	0.1	0.0	2.5	0.0	0.0	13.4
1/4/2012	8.0	0.6	0.0	20.0	33.0	0.8	38.2	8.0	0.1	0.0	2.5	0.0	0.0	13.5
1/5/2012	8.0	0.3	0.0	19.8	33.0	0.8	38.2	8.0	0.1	0.0	2.5	0.0	0.0	13.1
1/6/2012	7.8	0.9	0.0	19.9	33.0	0.8	38.2	7.8	0.1	0.0	2.5	0.0	0.0	13.8
1/7/2012	7.7	0.5	0.0	19.9	33.0	0.8	38.1	7.7	0.1	0.0	2.5	0.0	0.0	13.5
1/8/2012	7.7	0.8	0.0	19.8	33.0	0.8	38.0	7.7	0.1	0.0	2.5	0.0	0.0	13.8
1/9/2012	7.7	0.4	0.0	19.6	33.0	0.8	37.9	7.7	0.1	0.0	2.5	0.0	0.0	13.3
1/10/2012	7.7	0.6	0.0	19.3	33.0	0.8	37.6	7.7	0.1	0.0	2.5	0.0	0.0	13.5
1/11/2012	7.7	0.9	0.0	19.3	33.0	0.8	37.6	7.7	0.1	0.0	2.5	0.0	0.0	13.8
1/12/2012	7.7	0.9	0.0	19.5	33.0	0.8	37.8	7.7	0.1	0.0	2.5	0.0	0.0	13.8
1/13/2012	7.7	0.8	0.0	18.9	33.0	0.8	37.3	7.7	0.1	0.0	2.5	0.0	0.0	13.6
1/14/2012	7.8	0.5	0.0	18.4	33.0	0.8	36.9	7.8	0.1	0.0	2.5	0.0	0.0	13.3
1/15/2012	8.0	0.4	0.0	18.4	33.0	0.8	36.8	8.0	0.1	0.0	2.5	0.0	0.0	13.2
1/16/2012	8.1	0.3	0.0	18.2	33.0	0.8	36.8	8.1	0.1	0.0	2.5	0.0	0.0	12.8
1/17/2012	7.6	1.4	0.0	18.1	33.0	0.8	36.7	7.6	0.1	0.0	2.5	0.0	0.0	13.9
1/18/2012	7.7	1.6	0.0	18.5	33.0	0.8	36.5	7.7	0.1	0.0	2.5	0.0	0.0	14.8
1/19/2012	7.5	0.9	0.0	18.7	33.0	0.8	36.8	7.5	0.1	0.0	2.5	0.0	0.0	14.1
1/20/2012	7.6	0.8	0.0	18.6	33.0	0.8	36.7	7.6	0.1	0.0	2.5	0.0	0.0	13.8
1/21/2012	7.5	0.8	0.0	19.0	33.0	0.8	37.0	7.5	0.1	0.0	2.5	0.0	0.0	13.9
1/22/2012	7.5	0.5	0.0	19.0	33.0	0.8	37.0	7.5	0.1	0.0	2.5	0.0	0.0	13.6
1/23/2012	7.5	0.7	0.0	18.8	33.0	0.8	36.9	7.5	0.1	0.0	2.5	0.0	0.0	13.8
1/24/2012	7.5	0.8	0.0	19.2	33.0	0.8	37.1	7.5	0.1	0.0	2.5	0.0	0.0	14.0
1/25/2012	7.5	0.9	0.0	18.7	33.0	0.8	37.0	7.5	0.1	0.0	2.5	0.0	0.0	13.7
1/26/2012	7.5	0.9	0.0	19.0	33.0	0.8	37.0	7.5	0.1	0.0	2.5	0.0	0.0	14.1
1/27/2012	7.5	0.3	0.0	19.1	33.0	0.8	37.1	7.5	0.1	0.0	2.5	0.0	0.0	13.5
1/28/2012	7.4	0.5	0.0	18.7	33.0	0.8	36.8	7.4	0.1	0.0	2.5	0.0	0.0	13.6
1/29/2012	7.5	0.2	0.0	18.6	33.0	0.8	36.7	7.5	0.1	0.0	2.5	0.0	0.0	13.2
1/30/2012	7.4	0.5	0.0	18.5	33.0	0.8	36.5	7.4	0.1	0.0	2.5	0.0	0.0	13.7

Table F1-4: RGCP Channel Water Budget Equation Analysis Segment 4

2010-12 Study Period

(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, above American Dam	Channel Seepage	MODFLOW Floodplain Recharge	Open Water Channel Evaporation	MODFLOW Riparian Evapo-transpiration	Diversions Authorized (None)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
1/31/2012	7.5	1.0	0.0	19.0	33.0	0.8	36.8	7.5	0.1	0.0	2.5	0.0	0.0	14.4
2/1/2012	7.4	0.3	0.0	18.1	33.0	0.8	36.4	7.4	0.1	0.0	2.5	0.0	0.0	13.2
2/2/2012	7.3	1.3	0.0	18.1	33.0	0.8	36.1	7.3	0.1	0.0	2.5	0.0	0.0	14.5
2/3/2012	7.5	1.3	0.0	18.3	33.0	0.8	36.2	7.5	0.1	0.0	2.5	0.0	0.0	14.5
2/4/2012	7.4	1.5	0.0	18.3	33.0	0.8	36.3	7.4	0.1	0.0	2.5	0.0	0.0	14.7
2/5/2012	7.3	1.9	0.0	18.6	33.0	0.8	36.4	7.3	0.1	0.0	2.5	0.0	0.0	15.2
2/6/2012	7.3	0.3	0.0	18.5	33.0	0.8	36.4	7.3	0.1	0.0	2.5	0.0	0.0	13.5
2/7/2012	7.3	0.5	0.0	18.1	33.0	0.8	36.1	7.3	0.1	0.0	2.5	0.0	0.0	13.6
2/8/2012	7.3	1.3	0.0	18.1	33.0	0.8	36.1	7.3	0.1	0.0	2.5	0.0	0.0	14.4
2/9/2012	7.3	0.5	0.0	18.2	33.0	0.8	36.0	7.3	0.1	0.0	2.5	0.0	0.0	13.9
2/10/2012	7.3	1.3	0.0	18.2	33.0	0.8	36.0	7.3	0.1	0.0	2.5	0.0	0.0	14.6
2/11/2012	7.2	1.0	0.0	18.2	33.0	0.8	36.1	7.2	0.1	0.0	2.5	0.0	0.0	14.3
2/12/2012	7.2	1.1	0.0	18.3	33.0	0.8	36.1	7.2	0.1	0.0	2.5	0.0	0.0	14.5
2/13/2012	7.2	1.0	0.0	18.2	33.0	0.8	36.0	7.2	0.1	0.0	2.5	0.0	0.0	14.3
2/14/2012	7.1	0.9	0.0	18.4	33.0	0.8	36.1	7.1	0.1	0.0	2.5	0.0	0.0	14.4
2/15/2012	7.2	0.9	0.0	18.4	33.0	0.8	36.1	7.2	0.1	0.0	2.5	0.0	0.0	14.3
2/16/2012	7.3	1.0	0.0	18.4	33.0	0.8	36.2	7.3	0.1	0.0	2.5	0.0	0.0	14.4
2/17/2012	7.1	0.4	0.0	18.6	33.0	0.8	36.2	7.1	0.1	0.0	2.5	0.0	0.0	14.0
2/18/2012	7.1	0.5	0.0	18.3	33.0	0.8	36.1	7.1	0.1	0.0	2.5	0.0	0.0	13.9
2/19/2012	7.0	0.3	0.0	18.0	33.0	0.8	35.7	7.0	0.1	0.0	2.5	0.0	0.0	13.7
2/20/2012	7.0	1.8	0.0	18.1	33.0	0.8	35.7	7.0	0.1	0.0	2.5	0.0	0.0	15.3
2/21/2012	6.8	0.7	0.0	18.2	33.0	0.8	35.8	6.8	0.1	0.0	2.5	0.0	0.0	14.3
2/22/2012	6.9	0.5	0.0	18.1	33.0	0.8	35.6	6.9	0.1	0.0	2.5	0.0	0.0	14.2
2/23/2012	6.7	0.5	0.0	18.1	33.0	0.8	35.5	6.7	0.1	0.0	2.5	0.0	0.0	14.2
2/24/2012	6.8	0.6	0.0	17.7	33.0	0.8	35.3	6.8	0.1	0.0	2.5	0.0	0.0	14.2
2/25/2012	6.8	0.6	0.0	17.4	33.0	0.8	34.9	6.8	0.1	0.0	2.5	0.0	0.0	14.3
2/26/2012	6.8	0.3	0.0	17.3	33.0	0.8	34.7	6.8	0.1	0.0	2.5	0.0	0.0	14.0
2/27/2012	6.7	0.3	0.0	17.3	33.0	0.8	34.7	6.7	0.1	0.0	2.5	0.0	0.0	14.1
2/28/2012	6.5	0.9	0.0	17.3	33.0	0.8	34.7	6.5	0.1	0.0	2.5	0.0	0.0	14.7
2/29/2012	6.5	0.0	0.0	17.1	33.0	0.8	34.5	6.5	0.1	0.0	2.5	0.0	0.0	13.8
3/1/2012	6.5	1.0	0.0	17.2	33.0	0.0	34.4	6.5	6.4	2.6	7.2	0.0	0.0	0.6
3/2/2012	6.5	0.6	0.0	17.3	33.0	0.0	34.4	6.5	6.4	2.6	7.2	0.0	0.0	0.3
3/3/2012	6.4	0.4	0.0	17.0	33.0	0.0	34.3	6.4	6.4	2.6	7.2	0.0	0.0	-0.1
3/4/2012	6.3	0.1	0.0	16.9	33.0	0.0	34.0	6.3	6.4	2.6	7.2	0.0	0.0	-0.2
3/5/2012	6.4	0.5	0.0	17.2	33.0	0.0	34.3	6.4	6.4	2.6	7.2	0.0	0.0	0.3
3/6/2012	6.4	0.8	0.0	17.3	33.0	0.0	34.5	6.4	6.4	2.6	7.2	0.0	0.0	0.5
3/7/2012	6.4	0.3	0.0	17.5	33.0	0.0	34.5	6.4	6.4	2.6	7.2	0.0	0.0	0.0
3/8/2012	6.3	0.4	0.0	17.4	33.0	0.0	34.5	6.3	6.4	2.6	7.2	0.0	0.0	0.2
3/9/2012	6.3	0.3	0.0	17.3	33.0	0.0	34.4	6.3	6.4	2.6	7.2	0.0	0.0	0.0
3/10/2012	6.4	1.3	0.0	17.6	33.0	0.0	34.7	6.4	6.4	2.6	7.2	0.0	0.0	1.0
3/11/2012	6.3	0.9	0.0	17.4	33.0	0.0	34.6	6.3	6.4	2.6	7.2	0.0	0.0	0.6
3/12/2012	6.4	1.2	0.0	17.4	33.0	0.0	34.5	6.4	6.4	2.6	7.2	0.0	0.0	0.9
3/13/2012	6.3	0.1	0.0	17.4	33.0	0.0	34.6	6.3	6.4	2.6	7.2	0.0	0.0	-0.3
3/14/2012	6.3	0.7	0.0	17.3	33.0	0.0	34.4	6.3	6.4	2.6	7.2	0.0	0.0	0.4
3/15/2012	6.3	0.7	0.0	17.3	33.0	0.0	34.3	6.3	6.4	2.6	7.2	0.0	0.0	0.5
3/16/2012	6.2	0.1	0.0	17.1	33.0	0.0	34.3	6.2	6.4	2.6	7.2	0.0	0.0	-0.3
3/17/2012	6.3	0.5	0.0	17.4	33.0	0.0	34.5	6.3	6.4	2.6	7.2	0.0	0.0	0.3
3/18/2012	6.3	0.4	0.0	17.9	33.0	0.0	34.7	6.3	6.4	2.6	7.2	0.0	0.0	0.4
3/19/2012	6.2	0.5	0.0	18.2	33.0	0.0	35.0	6.2	6.4	2.6	7.2	0.0	0.0	0.5
3/20/2012	6.3	0.8	0.0	18.0	33.0	0.0	35.0	6.3	6.4	2.6	7.2	0.0	0.0	0.6
3/21/2012	6.3	0.1	0.0	17.7	33.0	0.0	34.8	6.3	6.4	2.6	7.2	0.0	0.0	-0.2



Table F1-4: RGCP Channel Water Budget Equation Analysis Segment 4

2010-12 Study Period

(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, above American Dam	Channel Seepage	MODFLOW Floodplain Recharge	Open Water Channel Evaporation	MODFLOW Riparian Evapo-transpiration	Diversions Authorized (None)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
3/22/2012	6.3	0.3	0.0	17.5	33.0	0.0	34.7	6.3	6.4	2.6	7.2	0.0	0.0	0.0
3/23/2012	6.3	0.1	0.0	17.4	33.0	0.0	34.5	6.3	6.4	2.6	7.2	0.0	0.0	-0.1
3/24/2012	6.3	0.3	0.0	17.5	33.0	0.0	34.6	6.3	6.4	2.6	7.2	0.0	0.0	0.0
3/25/2012	6.3	0.2	0.0	17.8	33.0	0.0	34.7	6.3	6.4	2.6	7.2	0.0	0.0	0.0
3/26/2012	6.2	0.6	0.0	17.7	33.0	0.0	34.7	6.2	6.4	2.6	7.2	0.0	0.0	0.4
3/27/2012	6.2	0.5	0.0	17.7	33.0	0.0	34.7	6.2	6.4	2.6	7.2	0.0	0.0	0.4
3/28/2012	6.2	0.2	0.0	17.7	33.0	0.0	34.7	6.2	6.4	2.6	7.2	0.0	0.0	0.0
3/29/2012	6.2	0.2	0.0	17.6	33.0	0.0	34.7	6.2	6.4	2.6	7.2	0.0	0.0	-0.1
3/30/2012	6.2	0.3	0.0	17.5	33.0	0.0	34.5	6.2	6.4	2.6	7.2	0.0	0.0	0.1
3/31/2012	6.3	0.1	0.0	17.6	33.0	0.0	34.5	6.3	6.4	2.6	7.2	0.0	0.0	0.0
4/1/2012	383.0	0.2	0.0	17.8	33.0	0.0	354.0	46.8	6.4	5.6	7.2	0.0	0.0	13.9
4/2/2012	383.2	0.2	0.0	18.5	33.0	0.0	354.5	46.9	6.4	5.6	7.2	0.0	0.0	14.3
4/3/2012	383.0	0.1	0.0	18.5	33.0	0.0	354.8	46.9	6.4	5.6	7.2	0.0	0.0	13.7
4/4/2012	1873.9	0.3	0.0	18.9	33.0	0.0	355.1	119.3	6.4	5.6	7.2	0.0	0.0	1432.4
4/5/2012	1937.2	0.9	0.0	19.5	33.0	0.0	1746.0	154.9	6.4	5.6	7.2	0.0	0.0	70.4
4/6/2012	2232.9	0.6	0.0	19.6	33.0	0.0	1939.6	167.3	6.4	5.6	7.2	0.0	0.0	159.9
4/7/2012	2449.6	0.3	0.0	19.9	33.0	0.0	2265.2	181.3	6.4	5.6	7.2	0.0	0.0	37.1
4/8/2012	2402.0	0.0	0.0	20.2	33.0	0.0	2272.6	180.1	6.4	5.6	7.2	0.0	0.0	-16.8
4/9/2012	2358.1	0.0	0.0	18.7	33.0	0.0	2202.8	177.1	6.4	5.6	7.2	0.0	0.0	10.6
4/10/2012	2361.4	0.4	0.0	16.2	33.0	0.0	2202.7	177.3	6.4	5.6	7.2	0.0	0.0	11.7
4/11/2012	2344.8	1.0	0.0	16.3	33.0	0.0	2192.3	176.6	6.4	5.6	7.2	0.0	0.0	6.9
4/12/2012	2200.6	0.3	0.0	16.1	33.0	0.0	2131.4	171.7	6.4	5.6	7.2	0.0	0.0	-72.3
4/13/2012	2091.3	0.2	0.0	16.3	33.0	0.0	1963.4	164.8	6.4	5.6	7.2	0.0	0.0	-6.6
4/14/2012	1982.9	0.7	0.0	16.5	33.0	0.0	1924.3	161.5	6.4	5.6	7.2	0.0	0.0	-72.0
4/15/2012	1630.6	0.2	0.0	15.9	33.0	0.0	1650.9	144.9	6.4	5.6	7.2	0.0	0.0	-135.3
4/16/2012	1351.8	0.1	0.0	15.9	33.0	0.0	1326.1	127.1	6.4	5.6	7.2	0.0	0.0	-71.7
4/17/2012	1358.6	0.2	0.0	16.2	33.0	0.0	1246.1	125.3	6.4	5.6	7.2	0.0	0.0	17.2
4/18/2012	1339.3	0.1	0.0	16.4	33.0	0.0	1250.5	124.9	6.4	5.6	7.2	0.0	0.0	-5.9
4/19/2012	1307.3	0.2	0.0	16.7	33.0	0.0	1211.1	122.7	6.4	5.6	7.2	0.0	0.0	4.1
4/20/2012	1301.2	0.2	0.0	16.9	33.0	0.0	1195.6	122.2	6.4	5.6	7.2	0.0	0.0	14.2
4/21/2012	1236.3	0.6	0.0	16.7	33.0	0.0	1172.4	119.6	6.4	5.6	7.2	0.0	0.0	-24.6
4/22/2012	1101.8	0.5	0.0	17.3	33.0	0.0	1071.4	111.8	6.4	5.6	7.2	0.0	0.0	-49.8
4/23/2012	1044.5	1.1	0.0	18.9	33.0	0.0	982.3	106.8	6.4	5.6	7.2	0.0	0.0	-10.9
4/24/2012	1039.7	1.3	0.0	21.3	33.0	0.0	954.1	105.6	6.4	5.6	7.2	0.0	0.0	16.3
4/25/2012	1022.8	0.1	0.0	17.6	33.0	0.0	954.0	105.1	6.4	5.6	7.2	0.0	0.0	-4.9
4/26/2012	1002.9	0.2	0.0	17.9	33.0	0.0	923.1	103.1	6.4	5.6	7.2	0.0	0.0	8.5
4/27/2012	1102.8	0.1	0.0	21.3	33.0	0.0	952.0	107.8	6.4	5.6	7.2	0.0	0.0	78.1
4/28/2012	1193.4	0.4	0.0	24.1	33.0	0.0	1060.9	114.4	6.4	5.6	7.2	0.0	0.0	56.2
4/29/2012	1283.5	0.2	0.0	19.5	33.0	0.0	1141.3	120.4	6.4	5.6	7.2	0.0	0.0	55.3
4/30/2012	1130.8	0.2	0.0	19.3	33.0	0.0	1125.4	114.6	6.4	5.6	7.2	0.0	0.0	-76.0
5/1/2012	1049.7	0.6	0.0	18.4	33.0	0.0	968.0	106.3	6.4	8.8	7.2	0.0	0.0	4.9
5/2/2012	1109.4	0.5	0.0	18.5	33.0	0.0	1014.6	110.3	6.4	8.8	7.2	0.0	0.0	14.1
5/3/2012	1116.0	0.2	0.0	18.9	33.0	0.0	1020.5	110.6	6.4	8.8	7.2	0.0	0.0	14.5
5/4/2012	1096.2	0.4	0.0	18.9	33.0	0.0	1016.9	109.8	6.4	8.8	7.2	0.0	0.0	-0.6
5/5/2012	1069.3	0.3	0.0	18.4	33.0	0.0	996.9	108.4	6.4	8.8	7.2	0.0	0.0	-6.8
5/6/2012	744.2	0.9	72.8	17.8	33.0	0.0	867.8	91.8	6.4	8.8	7.2	0.0	0.0	-113.4
5/7/2012	524.7	0.1	40.8	17.5	33.0	0.0	616.0	69.0	6.4	8.8	7.2	0.0	0.0	-91.4
5/8/2012	418.7	0.5	0.0	17.8	33.0	0.0	460.2	54.9	6.4	8.8	7.2	0.0	0.0	-67.6
5/9/2012	721.9	0.6	0.0	18.6	33.0	0.0	381.4	64.7	6.4	8.8	7.2	0.0	0.0	305.5
5/10/2012	656.1	0.4	0.0	18.6	33.0	0.0	643.7	75.8	6.4	8.8	7.2	0.0	0.0	-33.9
5/11/2012	418.6	0.2	119.7	18.2	33.0	0.0	589.5	62.7	6.4	8.8	7.2	0.0	0.0	-85.0

Table F1-4: RGCP Channel Water Budget Equation Analysis Segment 4

2010-12 Study Period

(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
	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, above American Dam	Channel Seepage	MODFLOW Floodplain Recharge	Open Water Channel Evaporation	MODFLOW Riparian Evapo- transpiration	Diversions Authorized (None)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
Date														
5/12/2012	382.8	0.1	0.0	18.1	33.0	0.0	374.2	47.3	6.4	8.8	7.2	0.0	0.0	-9.9
5/13/2012	383.1	0.2	0.0	18.0	33.0	0.0	354.1	46.8	6.4	8.8	7.2	0.0	0.0	10.8
5/14/2012	383.1	0.8	0.0	18.0	33.0	0.0	354.3	46.8	6.4	8.8	7.2	0.0	0.0	11.3
5/15/2012	383.1	0.8	0.0	17.5	33.0	0.0	354.0	46.8	6.4	8.8	7.2	0.0	0.0	11.1
5/16/2012	383.2	0.7	0.0	17.0	33.0	0.0	353.5	46.8	6.4	8.8	7.2	0.0	0.0	11.1
5/17/2012	383.0	1.5	0.0	16.9	33.0	0.0	353.3	46.8	6.4	8.8	7.2	0.0	0.0	11.9
5/18/2012	383.1	1.0	0.0	16.7	33.0	0.0	353.0	46.8	6.4	8.8	7.2	0.0	0.0	11.5
5/19/2012	718.2	0.5	0.0	16.7	33.0	0.0	353.1	63.3	6.4	8.8	7.2	0.0	0.0	329.6
5/20/2012	597.9	1.2	0.0	16.7	33.0	0.0	631.6	72.6	6.4	8.8	7.2	0.0	0.0	-77.8
5/21/2012	430.1	0.4	58.1	16.6	33.0	0.0	537.7	61.0	6.4	8.8	7.2	0.0	0.0	-83.0
5/22/2012	386.2	1.5	0.0	16.6	33.0	0.0	384.3	48.4	6.4	8.8	7.2	0.0	0.0	-17.8
5/23/2012	383.0	1.1	0.0	16.8	33.0	0.0	354.6	46.8	6.4	8.8	7.2	0.0	0.0	10.0
5/24/2012	383.1	0.4	0.0	17.1	33.0	0.0	353.3	46.8	6.4	8.8	7.2	0.0	0.0	11.0
5/25/2012	554.1	0.1	0.0	16.8	33.0	0.0	353.3	52.0	6.4	8.8	7.2	0.0	0.0	176.2
5/26/2012	413.8	0.5	42.9	17.0	33.0	0.0	506.7	59.0	6.4	8.8	7.2	0.0	0.0	-80.9
5/27/2012	382.5	1.3	0.0	17.4	33.0	0.0	369.9	47.1	6.4	8.8	7.2	0.0	0.0	-5.3
5/28/2012	382.7	0.2	0.0	17.8	33.0	0.0	353.3	46.8	6.4	8.8	7.2	0.0	0.0	11.2
5/29/2012	383.1	0.4	0.0	17.0	33.0	0.0	353.4	46.8	6.4	8.8	7.2	0.0	0.0	10.9
5/30/2012	383.1	0.5	0.0	16.9	33.0	0.0	353.3	46.8	6.4	8.8	7.2	0.0	0.0	11.0
5/31/2012	366.4	0.5	0.0	16.7	33.0	0.0	353.1	46.6	6.4	8.8	7.2	0.0	0.0	-5.6
6/1/2012	1108.6	1.2	65.9	16.6	33.0	0.0	1224.1	119.0	6.4	9.1	7.2	0.0	0.0	-140.5
6/2/2012	587.1	1.3	126.8	16.4	33.0	0.0	763.3	78.2	6.4	9.1	7.2	0.0	0.0	-99.7
6/3/2012	568.9	0.6	0.0	16.5	33.0	0.0	522.8	66.1	6.4	9.1	7.2	0.0	0.0	7.3
6/4/2012	842.1	0.5	0.0	16.9	33.0	0.0	551.6	81.4	6.4	9.1	7.2	0.0	0.0	236.8
6/5/2012	796.4	0.4	0.0	16.6	33.0	0.0	793.9	91.2	6.4	9.1	7.2	0.0	0.0	-61.3
6/6/2012	687.5	0.3	0.0	16.6	33.0	0.0	678.0	78.7	6.4	9.1	7.2	0.0	0.0	-42.0
6/7/2012	991.5	0.8	0.0	19.3	33.0	0.0	680.0	92.4	6.4	9.1	7.2	0.0	0.0	249.4
6/8/2012	1263.3	0.9	0.0	20.7	33.0	0.0	1109.9	119.5	6.4	9.1	7.2	0.0	0.0	65.8
6/9/2012	1168.0	0.6	0.0	19.1	33.0	0.0	1099.5	114.4	6.4	9.1	7.2	0.0	0.0	-16.0
6/10/2012	1323.4	1.7	0.0	17.1	33.0	0.0	1116.0	119.6	6.4	9.1	7.2	0.0	0.0	116.9
6/11/2012	1613.8	0.7	0.0	19.0	33.0	0.0	1406.8	137.6	6.4	9.1	7.2	0.0	0.0	99.3
6/12/2012	1839.7	0.9	0.0	16.8	33.0	0.0	1617.5	149.6	6.4	9.1	7.2	0.0	0.0	100.6
6/13/2012	1772.9	1.1	0.0	17.0	33.0	0.0	1714.3	150.2	6.4	9.1	7.2	0.0	0.0	-63.2
6/14/2012	1600.6	1.0	0.0	17.6	33.0	0.0	1545.2	141.0	6.4	9.1	7.2	0.0	0.0	-56.8
6/15/2012	1383.8	1.1	0.0	17.8	33.0	0.0	1386.8	130.7	6.4	9.1	7.2	0.0	0.0	-104.5
6/16/2012	1063.4	1.6	0.0	18.0	33.0	0.0	1111.6	111.7	6.4	9.1	7.2	0.0	0.0	-130.0
6/17/2012	972.6	1.8	0.0	18.4	33.0	0.0	902.0	100.6	6.4	9.1	7.2	0.0	0.0	0.4
6/18/2012	1057.5	1.1	0.0	20.4	33.0	0.0	909.1	104.0	6.4	9.1	7.2	0.0	0.0	76.1
6/19/2012	1233.9	0.9	0.0	18.1	33.0	0.0	1087.7	117.4	6.4	9.1	7.2	0.0	0.0	58.0
6/20/2012	1184.9	1.8	0.0	16.8	33.0	0.0	1110.3	115.4	6.4	9.1	7.2	0.0	0.0	-11.9
6/21/2012	1228.2	0.8	0.0	16.8	33.0	0.0	1094.4	116.5	6.4	9.1	7.2	0.0	0.0	45.1
6/22/2012	1282.5	0.5	0.0	16.8	33.0	0.0	1170.0	120.8	6.4	9.1	7.2	0.0	0.0	19.3
6/23/2012	1227.7	1.1	0.0	16.7	33.0	0.0	1169.2	119.2	6.4	9.1	7.2	0.0	0.0	-32.6
6/24/2012	1116.7	0.8	0.0	16.7	33.0	0.0	1075.2	112.6	6.4	9.1	7.2	0.0	0.0	-43.2
6/25/2012	992.4	1.5	0.0	16.6	33.0	0.0	956.6	103.9	6.4	9.1	7.2	0.0	0.0	-39.7
6/26/2012	950.2	1.4	0.0	16.4	33.0	0.0	882.0	99.4	6.4	9.1	7.2	0.0	0.0	-3.1
6/27/2012	1034.8	2.7	0.0	16.7	33.0	0.0	911.2	104.0	6.4	9.1	7.2	0.0	0.0	49.2
6/28/2012	1060.1	4.2	0.0	17.6	33.0	0.0	964.0	107.3	6.4	9.1	7.2	0.0	0.0	21.0
6/29/2012	928.1	3.8	0.0	16.8	33.0	0.0	930.9	101.2	6.4	9.1	7.2	0.0	0.0	-73.1
6/30/2012	783.5	1.8	0.0	16.4	33.0	0.0	781.7	88.7	6.4	9.1	7.2	0.0	0.0	-58.4
7/1/2012	845.6	3.8	0.0	16.3	33.0	0.0	723.0	88.9	6.4	6.8	7.2	0.0	0.0	66.5

Table F1-4: RGCP Channel Water Budget Equation Analysis Segment 4

2010-12 Study Period

(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, above American Dam	Channel Seepage	MODFLOW Floodplain Recharge	Open Water Channel Evaporation	MODFLOW Riparian Evapo-transpiration	Diversions Authorized (None)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
7/2/2012	938.9	2.0	0.0	16.0	33.0	0.0	805.5	96.4	6.4	6.8	7.2	0.0	0.0	67.7
7/3/2012	1003.0	1.5	0.0	15.7	33.0	0.0	886.1	101.9	6.4	6.8	7.2	0.0	0.0	44.8
7/4/2012	1053.7	4.4	0.0	15.9	33.0	0.0	941.6	106.1	6.4	6.8	7.2	0.0	0.0	38.9
7/5/2012	1049.0	2.8	0.0	16.5	33.0	0.0	954.4	105.9	6.4	6.8	7.2	0.0	0.0	20.6
7/6/2012	1050.3	3.8	0.0	16.9	33.0	0.0	963.5	106.4	6.4	6.8	7.2	0.0	0.0	13.7
7/7/2012	1011.5	2.2	0.0	17.1	33.0	0.0	944.2	104.3	6.4	6.8	7.2	0.0	0.0	-5.0
7/8/2012	1005.4	3.6	0.0	17.3	33.0	0.0	926.6	103.7	6.4	6.8	7.2	0.0	0.0	8.6
7/9/2012	920.1	2.6	0.0	17.9	33.0	0.0	887.1	98.8	6.4	6.8	7.2	0.0	0.0	-32.6
7/10/2012	822.9	2.4	0.0	17.4	33.0	0.0	818.6	92.7	6.4	6.8	7.2	0.0	0.0	-56.0
7/11/2012	827.5	2.1	0.0	17.5	33.0	0.0	743.2	89.2	6.4	6.8	7.2	0.0	0.0	27.3
7/12/2012	787.4	2.4	0.0	17.5	33.0	0.0	749.6	88.2	6.4	6.8	7.2	0.0	0.0	-17.8
7/13/2012	629.5	2.8	0.1	17.5	33.0	0.0	680.1	78.0	6.4	6.8	7.2	0.0	0.0	-95.5
7/14/2012	612.7	3.3	0.0	17.5	33.0	0.0	554.8	69.3	6.4	6.8	7.2	0.0	0.0	22.0
7/15/2012	640.1	3.3	0.0	17.4	33.0	0.0	571.1	73.1	6.4	6.8	7.2	0.0	0.0	29.3
7/16/2012	676.5	1.9	0.0	17.4	33.0	0.0	579.8	73.4	6.4	6.8	7.2	0.0	0.0	55.2
7/17/2012	709.8	2.7	0.0	16.4	33.0	0.0	636.9	80.1	6.4	6.8	7.2	0.0	0.0	24.5
7/18/2012	848.4	2.2	0.0	15.7	33.0	0.0	671.3	86.5	6.4	6.8	7.2	0.0	0.0	121.2
7/19/2012	1252.7	1.8	0.0	15.6	33.0	0.0	963.6	114.6	6.4	6.8	7.2	0.0	0.0	204.5
7/20/2012	1273.5	2.9	0.0	15.4	33.0	0.0	1210.0	122.1	6.4	6.8	7.2	0.0	0.0	-27.6
7/21/2012	1177.1	2.5	0.0	16.8	33.0	0.0	1099.4	115.4	6.4	6.8	7.2	0.0	0.0	-5.8
7/22/2012	1068.1	2.8	0.0	17.5	33.0	0.0	1037.2	109.6	6.4	6.8	7.2	0.0	0.0	-45.6
7/23/2012	1030.0	3.0	0.0	17.1	33.0	0.0	944.7	104.7	6.4	6.8	7.2	0.0	0.0	13.3
7/24/2012	1122.4	3.1	0.0	17.3	33.0	0.0	953.8	108.2	6.4	6.8	7.2	0.0	0.0	93.5
7/25/2012	1275.6	1.4	0.0	17.1	33.0	0.0	1109.8	118.5	6.4	6.8	7.2	0.0	0.0	78.4
7/26/2012	1329.7	4.6	0.0	17.2	33.0	0.0	1233.4	124.3	6.4	6.8	7.2	0.0	0.0	6.3
7/27/2012	1222.7	3.2	0.0	17.0	33.0	0.0	1186.4	119.8	6.4	6.8	7.2	0.0	0.0	-50.6
7/28/2012	1050.9	3.4	0.0	17.3	33.0	0.0	1031.6	108.4	6.4	6.8	7.2	0.0	0.0	-55.7
7/29/2012	989.8	3.2	0.0	16.8	33.0	0.0	932.8	103.1	6.4	6.8	7.2	0.0	0.0	-13.5
7/30/2012	955.0	2.8	0.0	17.9	33.0	0.0	884.3	99.8	6.4	6.8	7.2	0.0	0.0	4.2
7/31/2012	975.6	2.1	0.0	17.3	33.0	0.0	877.8	100.4	6.4	6.8	7.2	0.0	0.0	29.5
8/1/2012	1032.8	4.1	0.0	17.4	33.0	0.0	910.8	103.5	6.4	6.4	7.2	0.0	0.0	53.0
8/2/2012	1150.3	3.3	0.0	17.3	33.0	0.0	1009.0	111.6	6.4	6.4	7.2	0.0	0.0	63.4
8/3/2012	1085.2	1.8	0.0	17.7	33.0	0.0	1060.2	111.6	6.4	6.4	7.2	0.0	0.0	-54.2
8/4/2012	883.0	3.2	0.0	20.7	33.0	0.0	909.6	98.3	6.4	6.4	7.2	0.0	0.0	-87.9
8/5/2012	756.8	2.3	0.0	19.5	33.0	0.0	762.2	87.1	6.4	6.4	7.2	0.0	0.0	-57.7
8/6/2012	739.7	2.8	0.0	19.7	33.0	0.0	679.3	82.2	6.4	6.4	7.2	0.0	0.0	13.8
8/7/2012	785.1	3.1	0.0	18.9	33.0	0.0	681.7	84.2	6.4	6.4	7.2	0.0	0.0	54.1
8/8/2012	937.5	2.6	0.0	18.7	33.0	0.0	765.5	94.4	6.4	6.4	7.2	0.0	0.0	111.9
8/9/2012	1080.1	2.0	0.0	18.2	33.0	0.0	940.5	107.0	6.4	6.4	7.2	0.0	0.0	65.8
8/10/2012	1053.1	3.4	0.0	18.7	33.0	0.0	985.2	107.1	6.4	6.4	7.2	0.0	0.0	-4.0
8/11/2012	1077.8	3.2	0.0	19.3	33.0	0.0	956.3	106.9	6.4	6.4	7.2	0.0	0.0	50.1
8/12/2012	1275.6	5.4	0.0	22.9	33.0	0.0	1058.5	116.4	6.4	6.4	7.2	0.0	0.0	142.0
8/13/2012	1451.4	3.9	0.0	18.7	33.0	0.0	1309.7	130.3	6.4	6.4	7.2	0.0	0.0	47.0
8/14/2012	1428.0	3.7	0.0	18.7	33.0	0.0	1344.7	130.5	6.4	6.4	7.2	0.0	0.0	-11.8
8/15/2012	1344.7	2.1	0.0	18.5	33.0	0.0	1298.3	127.2	6.4	6.4	7.2	0.0	0.0	-47.2
8/16/2012	1373.1	3.4	0.0	19.5	33.0	0.0	1196.0	124.3	6.4	6.4	7.2	0.0	0.0	88.7
8/17/2012	1267.0	3.1	0.0	18.8	33.0	0.0	1270.5	122.3	6.4	6.4	7.2	0.0	0.0	-90.8
8/18/2012	1208.5	2.7	0.0	21.8	33.0	0.0	1143.1	117.5	6.4	6.4	7.2	0.0	0.0	-14.5
8/19/2012	1193.6	5.0	0.0	21.1	33.0	0.0	1105.4	115.9	6.4	6.4	7.2	0.0	0.0	11.3
8/20/2012	1187.8	1.9	0.0	22.0	33.0	0.0	1095.9	115.4	6.4	6.4	7.2	0.0	0.0	13.5
8/21/2012	1220.7	1.5	0.0	21.5	33.0	0.0	1096.4	116.4	6.4	6.4	7.2	0.0	0.0	44.0

Table F1-4: RGCP Channel Water Budget Equation Analysis Segment 4

2010-12 Study Period

(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, above American Dam	Channel Seepage	MODFLOW Floodplain Recharge	Open Water Channel Evaporation	MODFLOW Riparian Evapo-transpiration	Diversions Authorized (None)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
8/22/2012	1270.8	1.8	0.0	20.0	33.0	0.0	1151.4	119.7	6.4	6.4	7.2	0.0	0.0	34.4
8/23/2012	1263.9	3.8	0.0	19.4	33.0	0.0	1183.4	120.6	6.4	6.4	7.2	0.0	0.0	-3.8
8/24/2012	1226.6	2.3	0.0	19.6	33.0	0.0	1145.8	118.5	6.4	6.4	7.2	0.0	0.0	-2.8
8/25/2012	1076.1	1.0	0.0	19.9	33.0	0.0	1062.3	110.8	6.4	6.4	7.2	0.0	0.0	-63.1
8/26/2012	914.3	2.5	0.0	19.6	33.0	0.0	917.5	99.7	6.4	6.4	7.2	0.0	0.0	-67.8
8/27/2012	910.0	0.9	0.0	19.8	33.0	0.0	824.6	96.0	6.4	6.4	7.2	0.0	0.0	23.1
8/28/2012	879.1	1.2	0.0	19.6	33.0	0.0	834.3	95.4	6.4	6.4	7.2	0.0	0.0	-16.9
8/29/2012	835.4	2.2	0.0	19.5	33.0	0.0	781.4	91.1	6.4	6.4	7.2	0.0	0.0	-2.4
8/30/2012	771.4	1.3	0.0	19.3	33.0	0.0	750.0	87.4	6.4	6.4	7.2	0.0	0.0	-32.3
8/31/2012	713.8	3.0	0.0	19.6	33.0	0.0	684.8	81.7	6.4	6.4	7.2	0.0	0.0	-17.1
9/1/2012	714.7	2.2	0.0	22.1	33.0	0.0	649.6	79.8	6.4	5.1	7.2	0.0	0.0	23.8
9/2/2012	727.3	3.4	0.0	23.7	33.0	0.0	661.7	81.2	6.4	5.1	7.2	0.0	0.0	25.8
9/3/2012	737.2	2.1	0.0	22.1	33.0	0.0	671.2	82.1	6.4	5.1	7.2	0.0	0.0	22.4
9/4/2012	767.5	2.5	0.0	22.8	33.0	0.0	679.9	83.5	6.4	5.1	7.2	0.0	0.0	43.5
9/5/2012	788.3	5.3	0.0	25.1	33.0	0.0	707.0	85.2	6.4	5.1	7.2	0.0	0.0	40.7
9/6/2012	842.6	3.6	0.0	23.3	33.0	0.0	754.9	91.0	6.4	5.1	7.2	0.0	0.0	37.9
9/7/2012	849.3	3.0	0.0	22.5	33.0	0.0	780.1	92.1	6.4	5.1	7.2	0.0	0.0	16.8
9/8/2012	757.9	2.5	0.0	25.5	33.0	0.0	776.8	88.8	6.4	5.1	7.2	0.0	0.0	-65.4
9/9/2012	591.6	0.8	5.9	21.6	33.0	0.0	652.1	74.1	6.4	5.1	7.2	0.0	0.0	-92.0
9/10/2012	448.1	3.6	14.8	21.1	33.0	0.0	516.9	60.0	6.4	5.1	7.2	0.0	0.0	-75.1
9/11/2012	256.1	4.9	82.2	20.7	33.0	0.0	392.0	41.7	6.4	5.1	7.2	0.0	0.0	-55.5
9/12/2012	247.8	3.0	0.0	20.6	33.0	0.0	239.6	31.4	6.4	5.1	7.2	0.0	0.0	14.6
9/13/2012	616.9	1.9	0.0	20.4	33.0	0.0	275.0	54.0	6.4	5.1	7.2	0.0	0.0	324.6
9/14/2012	780.8	2.2	0.0	20.3	33.0	0.0	630.0	84.6	6.4	5.1	7.2	0.0	0.0	103.0
9/15/2012	9.0	1.9	3.0	20.5	33.0	0.0	65.5	9.0	6.4	5.1	7.2	0.0	0.0	-25.9
9/16/2012	6.5	2.0	0.0	21.1	33.0	0.0	37.2	6.5	6.4	5.1	7.2	0.0	0.0	0.1
9/17/2012	6.3	1.6	0.0	20.7	33.0	0.0	34.8	6.3	6.4	5.1	7.2	0.0	0.0	1.8
9/18/2012	6.2	2.0	0.0	20.6	33.0	0.0	33.7	6.2	6.4	5.1	7.2	0.0	0.0	3.2
9/19/2012	6.3	2.2	0.0	20.3	33.0	0.0	33.9	6.3	6.4	5.1	7.2	0.0	0.0	2.8
9/20/2012	7.4	3.4	0.0	19.8	33.0	0.0	34.2	7.4	6.4	5.1	7.2	0.0	0.0	3.2
9/21/2012	10.3	1.9	0.0	20.3	33.0	0.0	35.3	10.3	6.4	5.1	7.2	0.0	0.0	1.1
9/22/2012	10.9	3.9	0.0	19.9	33.0	0.0	37.7	10.9	6.4	5.1	7.2	0.0	0.0	0.3
9/23/2012	9.2	3.9	0.0	19.8	33.0	0.0	37.8	9.2	6.4	5.1	7.2	0.0	0.0	0.1
9/24/2012	7.4	2.4	0.0	20.1	33.0	0.0	36.2	7.4	6.4	5.1	7.2	0.0	0.0	0.4
9/25/2012	6.3	3.2	0.0	19.6	33.0	0.0	34.8	6.3	6.4	5.1	7.2	0.0	0.0	2.3
9/26/2012	6.1	0.5	0.0	19.5	33.0	0.0	34.4	6.1	6.4	5.1	7.2	0.0	0.0	-0.1
9/27/2012	6.1	2.5	0.0	19.6	33.0	0.0	34.2	6.1	6.4	5.1	7.2	0.0	0.0	2.1
9/28/2012	6.2	0.9	0.0	19.6	33.0	0.0	34.2	6.2	6.4	5.1	7.2	0.0	0.0	0.6
9/29/2012	6.2	0.2	0.0	19.7	33.0	0.0	34.0	6.2	6.4	5.1	7.2	0.0	0.0	0.1
9/30/2012	6.1	3.0	0.0	19.8	33.0	0.0	34.0	6.1	6.4	5.1	7.2	0.0	0.0	3.1
10/1/2012	6.2	1.2	0.0	19.2	33.0	0.0	34.1	6.2	6.4	0.0	7.2	0.0	0.0	5.7
10/2/2012	6.1	1.2	0.0	19.0	33.0	0.0	33.9	6.1	6.4	0.0	7.2	0.0	0.0	5.7
10/3/2012	6.1	1.9	0.0	19.0	33.0	0.0	34.3	6.1	6.4	0.0	7.2	0.0	0.0	5.9
10/4/2012	6.2	2.0	0.0	18.8	33.0	0.0	34.3	6.2	6.4	0.0	7.2	0.0	0.0	5.9
10/5/2012	6.1	1.1	0.0	18.9	33.0	0.0	33.8	6.1	6.4	0.0	7.2	0.0	0.0	5.7
10/6/2012	6.1	0.2	0.0	18.7	33.0	0.0	33.5	6.1	6.4	0.0	7.2	0.0	0.0	4.9
10/7/2012	6.1	0.5	0.0	18.7	33.0	0.0	33.6	6.1	6.4	0.0	7.2	0.0	0.0	5.0
10/8/2012	6.1	0.5	0.0	18.6	33.0	0.0	33.5	6.1	6.4	0.0	7.2	0.0	0.0	5.0
10/9/2012	6.1	0.7	0.0	18.7	33.0	0.0	33.6	6.1	6.4	0.0	7.2	0.0	0.0	5.1
10/10/2012	6.1	0.8	0.0	19.0	33.0	0.0	33.6	6.1	6.4	0.0	7.2	0.0	0.0	5.6
10/11/2012	6.0	1.3	0.0	18.7	33.0	0.0	33.6	6.0	6.4	0.0	7.2	0.0	0.0	5.7



Table F1-4: RGCP Channel Water Budget Equation Analysis Segment 4				2010-12 Study Period						(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
	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, above American Dam	Channel Seepage	MODFLOW Floodplain Recharge	Open Water Channel Evaporation	MODFLOW Riparian Evapo-transpiration	Diversions Authorized (None)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
Date														
10/12/2012	6.1	0.5	0.0	19.0	33.0	0.0	33.7	6.1	6.4	0.0	7.2	0.0	0.0	5.3
10/13/2012	6.2	1.6	0.0	18.9	33.0	0.0	33.6	6.2	6.4	0.0	7.2	0.0	0.0	6.2
10/14/2012	6.1	0.9	0.0	18.7	33.0	0.0	33.7	6.1	6.4	0.0	7.2	0.0	0.0	5.3
10/15/2012	6.1	0.9	0.0	18.7	33.0	0.0	33.6	6.1	6.4	0.0	7.2	0.0	0.0	5.4
10/16/2012	6.1	1.1	0.0	18.8	33.0	0.0	34.0	6.1	6.4	0.0	7.2	0.0	0.0	5.3
10/17/2012	6.1	1.4	0.0	18.9	33.0	0.0	34.2	6.1	6.4	0.0	7.2	0.0	0.0	5.5
10/18/2012	6.1	1.2	0.0	18.9	33.0	0.0	34.3	6.1	6.4	0.0	7.2	0.0	0.0	5.2
10/19/2012	6.1	0.8	0.0	0.0	33.0	0.0	34.5	6.1	6.4	0.0	7.2	0.0	0.0	-14.3
10/20/2012	6.1	1.0	0.0	0.0	33.0	0.0	34.6	6.1	6.4	0.0	7.2	0.0	0.0	-14.2
10/21/2012	6.0	1.4	0.0	0.0	33.0	0.0	34.6	6.0	6.4	0.0	7.2	0.0	0.0	-13.8
10/22/2012	6.1	2.0	0.0	18.8	33.0	0.0	34.8	6.1	6.4	0.0	7.2	0.0	0.0	5.3
10/23/2012	6.1	1.9	0.0	18.4	33.0	0.0	35.9	6.1	6.4	0.0	7.2	0.0	0.0	3.7
10/24/2012	6.2	1.1	0.0	19.0	33.0	0.0	36.5	6.2	6.4	0.0	7.2	0.0	0.0	3.1
10/25/2012	6.1	1.5	0.0	18.7	33.0	0.0	36.8	6.1	6.4	0.0	7.2	0.0	0.0	2.8
10/26/2012	6.1	1.1	0.0	18.8	33.0	0.0	35.6	6.1	6.4	0.0	7.2	0.0	0.0	3.7
10/27/2012	6.1	1.4	0.0	18.7	33.0	0.0	34.8	6.1	6.4	0.0	7.2	0.0	0.0	4.6
10/28/2012	6.1	1.6	0.0	18.7	33.0	0.0	34.8	6.1	6.4	0.0	7.2	0.0	0.0	4.8
10/29/2012	6.3	1.2	0.0	18.6	33.0	0.0	34.6	6.3	6.4	0.0	7.2	0.0	0.0	4.6
10/30/2012	6.2	0.9	0.0	18.7	33.0	0.0	34.5	6.2	6.4	0.0	7.2	0.0	0.0	4.5
10/31/2012	6.2	0.8	0.0	18.6	33.0	0.0	34.6	6.2	6.4	0.0	7.2	0.0	0.0	4.2
11/1/2012	6.3	0.2	0.0	28.4	33.0	0.8	34.5	6.3	0.1	0.0	2.5	0.0	0.0	25.3
11/2/2012	6.3	0.7	0.0	28.6	33.0	0.8	34.6	6.3	0.1	0.0	2.5	0.0	0.0	25.9
11/3/2012	6.3	1.0	0.0	28.7	33.0	0.8	34.7	6.3	0.1	0.0	2.5	0.0	0.0	26.3
11/4/2012	6.5	0.5	0.0	28.5	33.0	0.8	35.5	6.5	0.1	0.0	2.5	0.0	0.0	24.7
11/5/2012	6.6	0.1	0.0	28.3	33.0	0.8	36.4	6.6	0.1	0.0	2.5	0.0	0.0	23.1
11/6/2012	6.7	0.8	0.0	28.2	33.0	0.8	36.2	6.7	0.1	0.0	2.5	0.0	0.0	23.9
11/7/2012	6.8	0.8	0.0	27.9	33.0	0.8	36.2	6.8	0.1	0.0	2.5	0.0	0.0	23.7
11/8/2012	6.8	0.9	0.0	27.2	33.0	0.8	36.2	6.8	0.1	0.0	2.5	0.0	0.0	23.1
11/9/2012	7.0	0.2	0.0	26.9	33.0	0.8	36.5	7.0	0.1	0.0	2.5	0.0	0.0	21.8
11/10/2012	7.1	0.4	0.0	27.1	33.0	0.8	36.4	7.1	0.1	0.0	2.5	0.0	0.0	22.2
11/11/2012	7.1	0.8	0.0	26.9	33.0	0.8	36.6	7.1	0.1	0.0	2.5	0.0	0.0	22.4
11/12/2012	7.2	0.9	0.0	25.8	33.0	0.8	37.0	7.2	0.1	0.0	2.5	0.0	0.0	20.8
11/13/2012	7.4	1.8	0.0	25.9	33.0	0.8	37.0	7.4	0.1	0.0	2.5	0.0	0.0	21.8
11/14/2012	7.5	1.7	0.0	25.9	33.0	0.8	37.2	7.5	0.1	0.0	2.5	0.0	0.0	21.6
11/15/2012	7.5	1.5	0.0	26.3	33.0	0.8	37.3	7.5	0.1	0.0	2.5	0.0	0.0	21.7
11/16/2012	7.7	0.6	0.0	26.9	33.0	0.8	37.3	7.7	0.1	0.0	2.5	0.0	0.0	21.3
11/17/2012	7.7	0.3	0.0	26.9	33.0	0.8	37.3	7.7	0.1	0.0	2.5	0.0	0.0	21.0
11/18/2012	7.6	0.5	0.0	27.5	33.0	0.8	37.5	7.6	0.1	0.0	2.5	0.0	0.0	21.7
11/19/2012	7.5	0.1	0.0	27.6	33.0	0.8	37.4	7.5	0.1	0.0	2.5	0.0	0.0	21.4
11/20/2012	7.5	0.3	0.0	25.7	33.0	0.8	37.4	7.5	0.1	0.0	2.5	0.0	0.0	19.7
11/21/2012	7.6	0.5	0.0	26.8	33.0	0.8	37.7	7.6	0.1	0.0	2.5	0.0	0.0	20.8
11/22/2012	7.6	0.7	0.0	26.8	33.0	0.8	37.8	7.6	0.1	0.0	2.5	0.0	0.0	20.8
11/23/2012	7.6	0.3	0.0	25.3	33.0	0.8	38.2	7.6	0.1	0.0	2.5	0.0	0.0	18.6
11/24/2012	7.7	1.0	0.0	24.8	33.0	0.8	38.3	7.7	0.1	0.0	2.5	0.0	0.0	18.7
11/25/2012	7.7	0.4	0.0	24.0	33.0	0.8	38.3	7.7	0.1	0.0	2.5	0.0	0.0	17.4
11/26/2012	7.8	1.2	0.0	24.4	33.0	0.8	37.8	7.8	0.1	0.0	2.5	0.0	0.0	18.9
11/27/2012	7.7	0.9	0.0	23.5	33.0	0.8	37.6	7.7	0.1	0.0	2.5	0.0	0.0	18.0
11/28/2012	7.8	0.7	0.0	30.0	33.0	0.8	37.2	7.8	0.1	0.0	2.5	0.0	0.0	24.6
11/29/2012	7.8	0.7	0.0	37.6	33.0	0.8	37.0	7.8	0.1	0.0	2.5	0.0	0.0	32.5
11/30/2012	7.8	0.9	0.0	34.6	33.0	0.8	36.9	7.8	0.1	0.0	2.5	0.0	0.0	29.8



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

$$\Delta S_{ic} = (Q_{us} + P_c + Q_{cin} + Q_{irf} + Q_{gwrf}) - (Q_{cds} + Q_{cs} + Q_{fpr} + ET + Q_{da} + Q_{du})$$

- Sum of Inflow
- Sum of Outflow
- $\Delta S_{ic}$  - Change in Channel Storage

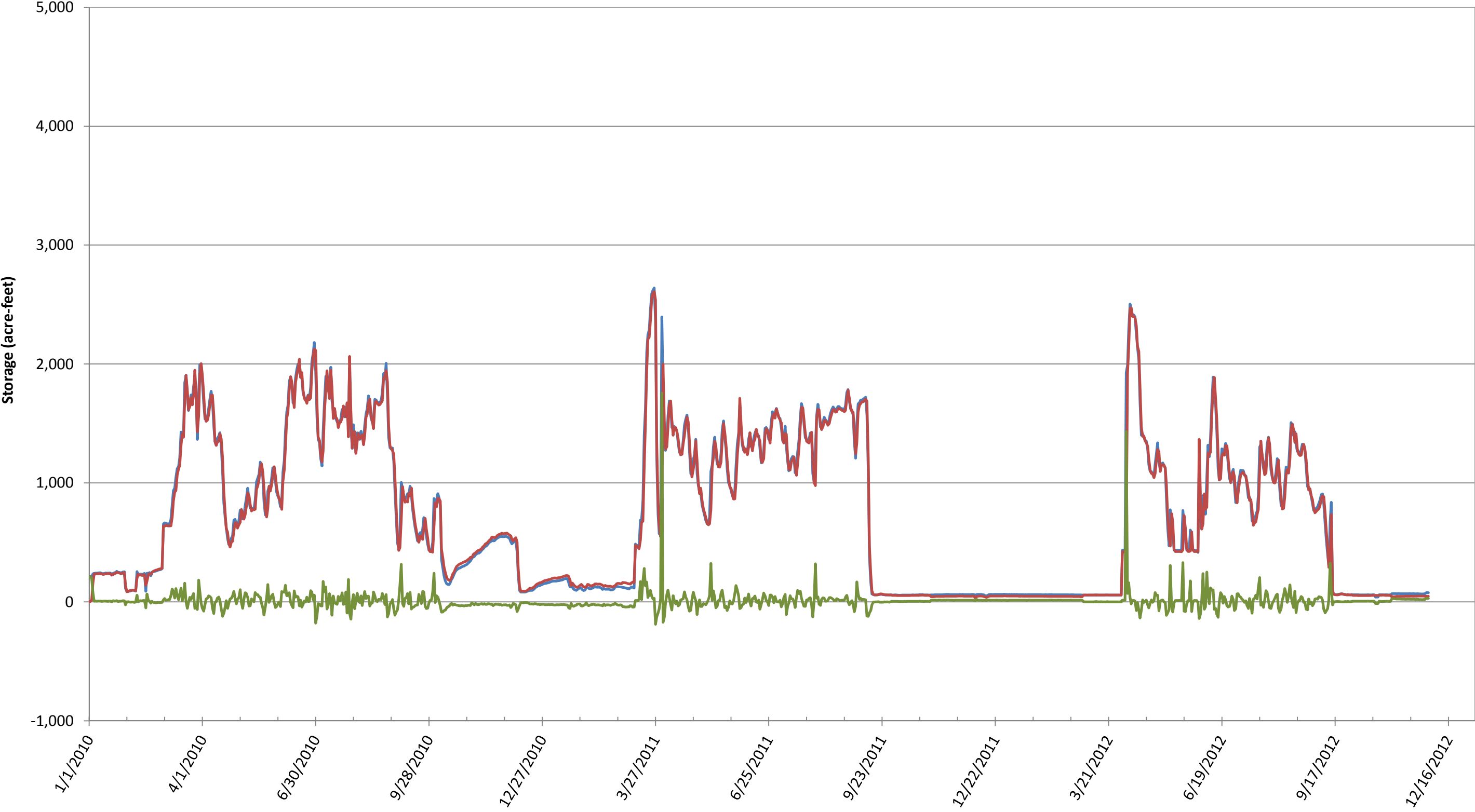


Table F1-5: Local Basin Scale Water Budget Equation      (Units = Acre-Feet)

Caballo Reservoir to Downstream of American Dam																					
	Surface Water Budget															Groundwater Budget					
	Qus	P	Qp			Qgwr <sup>f</sup>	Qds			Qgwr				ET	ΔS <sub>sw</sub>	Qgw <sub>us</sub>	Qgwr	Qp	Qgwr <sup>f</sup>	Qgw <sub>ds</sub>	ΔS <sub>gw</sub>
				MODFLOW Groundwater Return Flow to Rio Grande	MODFLOW Irrigation/ Drainage Return Flow	Groundwater Return Flow = Groundwater RF + Irrigation RRF	Downstream Channel Outflow, River Above American Dam	Channel Seepage (Q <sub>cs</sub> )	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
Date	River Below Caballo Dam	Precipitation Flows in River Channel	Pumping																		
1/1/2010	1.7	3.7	301.1	59.1	184.4	243.5	0.0	1.7	3.7	5.5	18.4	131.8	0.0	150.2	394.5	87.8	5.5	301.1	243.5	0.0	-451.3
1/2/2010	1.8	4.6	251.5	59.1	191.2	250.3	0.0	4.9	3.7	8.6	18.4	131.8	0.0	150.2	349.5	87.8	8.6	251.5	250.3	0.0	-405.4
1/3/2010	2.1	2.9	252.1	59.1	190.1	249.2	10.0	18.4	3.7	22.2	18.4	131.8	0.0	150.2	324.0	87.8	22.2	252.1	249.2	0.0	-391.2
1/4/2010	2.2	4.1	246.0	59.1	192.3	251.4	137.0	57.8	3.7	61.6	18.4	131.8	0.0	150.2	155.0	87.8	61.6	246.0	251.4	0.0	-348.0
1/5/2010	2.2	2.7	257.0	59.1	192.5	251.6	207.0	61.2	3.7	64.9	18.4	131.8	0.0	150.2	91.4	87.8	64.9	257.0	251.6	0.0	-355.8
1/6/2010	2.2	5.5	256.8	59.1	195.0	254.1	208.1	61.6	3.7	65.3	18.4	131.8	0.0	150.2	95.1	87.8	65.3	256.8	254.1	0.0	-357.8
1/7/2010	2.1	5.2	259.8	59.1	195.1	254.2	209.3	61.5	3.7	65.2	18.4	131.8	0.0	150.2	96.7	87.8	65.2	259.8	254.2	0.0	-361.0
1/8/2010	2.0	5.4	261.9	59.1	195.1	254.2	209.5	61.3	3.7	65.0	18.4	131.8	0.0	150.2	98.9	87.8	65.0	261.9	254.2	0.0	-363.3
1/9/2010	1.9	3.9	265.2	59.1	197.0	256.1	210.6	60.8	3.7	64.5	18.4	131.8	0.0	150.2	101.9	87.8	64.5	265.2	256.1	0.0	-369.0
1/10/2010	1.9	3.1	265.3	59.1	197.3	256.4	211.3	60.9	3.7	64.6	18.4	131.8	0.0	150.2	100.8	87.8	64.6	265.3	256.4	0.0	-369.3
1/11/2010	2.1	5.9	266.2	59.1	192.0	251.2	208.1	61.0	3.7	64.7	18.4	131.8	0.0	150.2	102.4	87.8	64.7	266.2	251.2	0.0	-364.8
1/12/2010	2.2	4.6	266.2	59.1	189.1	248.2	204.4	61.4	3.7	65.1	18.4	131.8	0.0	150.2	101.7	87.8	65.1	266.2	248.2	0.0	-361.5
1/13/2010	2.2	5.6	266.2	59.1	192.4	251.6	205.3	61.8	3.7	65.6	18.4	131.8	0.0	150.2	104.5	87.8	65.6	266.2	251.6	0.0	-364.4
1/14/2010	2.1	3.1	266.5	59.1	196.6	255.7	209.0	62.3	3.7	66.0	18.4	131.8	0.0	150.2	102.2	87.8	66.0	266.5	255.7	0.0	-368.3
1/15/2010	1.9	3.3	267.2	59.1	195.5	254.7	209.8	62.4	3.7	66.1	18.4	131.8	0.0	150.2	101.1	87.8	66.1	267.2	254.7	0.0	-367.9
1/16/2010	2.0	1.1	244.3	59.1	194.7	253.8	209.2	62.4	3.7	66.2	18.4	131.8	0.0	150.2	75.6	87.8	66.2	244.3	253.8	0.0	-344.1
1/17/2010	1.9	4.4	244.6	59.1	195.9	255.0	209.7	62.2	3.7	66.0	18.4	131.8	0.0	150.2	80.1	87.8	66.0	244.6	255.0	0.0	-345.8
1/18/2010	1.9	6.9	244.5	59.1	194.4	253.5	209.2	62.3	3.7	66.0	18.4	131.8	0.0	150.2	81.5	87.8	66.0	244.5	253.5	0.0	-344.2
1/19/2010	1.9	3.7	244.6	59.1	178.0	237.1	197.7	62.0	3.7	65.7	18.4	131.8	0.0	150.2	73.6	87.8	65.7	244.6	237.1	0.0	-328.1
1/20/2010	1.9	4.2	247.1	59.1	192.1	251.3	202.2	62.0	3.7	65.8	18.4	131.8	0.0	150.2	86.3	87.8	65.8	247.1	251.3	0.0	-344.7
1/21/2010	2.1	4.5	247.4	59.1	197.8	257.0	210.3	62.2	3.7	65.9	18.4	131.8	0.0	150.2	84.6	87.8	65.9	247.4	257.0	0.0	-350.6
1/22/2010	2.1	3.7	251.6	59.1	200.1	259.2	213.0	62.2	3.7	65.9	18.4	131.8	0.0	150.2	87.5	87.8	65.9	251.6	259.2	0.0	-357.0
1/23/2010	2.1	1.3	252.2	59.1	211.0	270.1	220.4	62.7	3.7	66.4	18.4	131.8	0.0	150.2	88.8	87.8	66.4	252.2	270.1	0.0	-368.1
1/24/2010	2.1	3.7	252.2	59.1	200.9	260.0	217.8	62.6	3.7	66.3	18.4	131.8	0.0	150.2	83.7	87.8	66.3	252.2	260.0	0.0	-358.0
1/25/2010	2.1	4.8	252.2	59.1	198.7	257.8	214.8	61.5	3.7	65.2	18.4	131.8	0.0	150.2	86.7	87.8	65.2	252.2	257.8	0.0	-356.9
1/26/2010	1.8	3.1	246.3	59.1	196.2	255.3	212.9	59.4	3.7	63.1	18.4	131.8	0.0	150.2	80.3	87.8	63.1	246.3	255.3	0.0	-350.7
1/27/2010	91.4	3.5	247.0	59.1	197.6	256.7	212.5	72.3	3.7	76.1	18.4	131.8	0.0	150.2	159.9	87.8	76.1	247.0	256.7	0.0	-339.8
1/28/2010	176.3	4.2	249.4	59.1	205.9	265.0	216.7	74.0	3.7	77.8	18.4	131.8	0.0	150.2	250.4	87.8	77.8	249.4	265.0	0.0	-348.9
1/29/2010	175.9	2.7	249.3	59.1	206.6	265.7	219.7	76.4	3.7	80.1	18.4	131.8	0.0	150.2	243.7	87.8	80.1	249.3	265.7	0.0	-347.1
1/30/2010	177.0	3.6	249.3	59.1	39.8	98.9	109.6	80.5	3.7	84.2	18.4	131.8	0.0	150.2	184.8	87.8	84.2	249.3	98.9	0.0	-176.2
1/31/2010	177.6	5.7	242.1	59.1	38.8	98.0	60.5	84.8	3.7	88.6	18.4	131.8	0.0	150.2	224.1	87.8	88.6	242.1	98.0	0.0	-163.7
2/1/2010	178.1	2.6	241.6	59.1	38.6	97.7	58.9	91.6	3.7	95.4	18.4	131.8	0.0	150.2	215.5	87.8	95.4	241.6	97.7	0.0	-156.1
2/2/2010	178.8	3.3	243.1	59.1	38.1	97.3	62.4	94.0	3.7	97.7	18.4	131.8	0.0	150.2	212.2	87.8	97.7	243.1	97.3	0.0	-154.8
2/3/2010	104.7	4.0	243.0	59.1	39.7	98.8	63.9	93.2	3.7	96.9	18.4	131.8	0.0	150.2	139.5	87.8	96.9	243.0	98.8	0.0	-157.0
2/4/2010	1.5	4.7	243.1	59.1	43.3	102.4	66.7	76.4	3.7	80.2	18.4	131.8	0.0	150.2	54.6	87.8	80.2	243.1	102.4	0.0	-177.5
2/5/2010	1.7	6.0	243.0	59.1	43.5	102.7	68.3	67.5	3.7	71.2	18.4	131.8	0.0	150.2	63.7	87.8	71.21				

Table F1-5: Local Basin Scale Water Budget Equation      (Units = Acre-Feet)

Caballo Reservoir to Downstream of American Dam																					
	Surface Water Budget															Groundwater Budget					
	Qus	P	Qp			Qgwrf	Qds			Qgwr				ET	ΔSsw	Qgwus	Qgwr	Qp	Qgwrf	Qgwds	ΔSgw
				MODFLOW Groundwater Return Flow to Rio Grande	MODFLOW 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	Groundwater Return Flow = Groundwater RF + Irrigation RRF	Downstream Groundwater Outflow	Change in Vadose Zone and Groundwater Storage	
Date	River Below Caballo Dam	Precipitation Flows in River Channel	Pumping																		
3/12/2010	1517.1	4.3	303.5	31.8	227.6	259.4	951.7	404.1	354.0	758.1	58.1	307.5	25.8	391.4	-16.8	40.6	758.1	303.5	259.4	0.0	235.9
3/13/2010	1769.7	1.4	303.5	31.8	236.6	268.5	1001.7	415.4	354.0	769.4	58.1	307.5	25.8	391.4	180.5	40.6	769.4	303.5	268.5	0.0	238.1
3/14/2010	1767.8	2.2	303.6	31.8	256.5	288.3	1024.8	443.0	354.0	797.0	58.1	307.5	25.8	391.4	148.7	40.6	797.0	303.6	288.3	0.0	245.7
3/15/2010	1881.6	2.8	303.6	31.8	265.7	297.5	1180.0	468.8	354.0	822.8	58.1	307.5	25.8	391.4	91.4	40.6	822.8	303.6	297.5	0.0	262.3
3/16/2010	2498.5	0.5	303.6	31.8	266.6	298.4	1275.9	473.6	354.0	827.6	58.1	307.5	25.8	391.4	606.1	40.6	827.6	303.6	298.4	0.0	266.2
3/17/2010	2628.1	1.3	306.1	31.8	289.7	321.6	1249.8	510.2	354.0	864.2	58.1	307.5	25.8	391.4	751.6	40.6	864.2	306.1	321.6	0.0	277.2
3/18/2010	2420.3	3.1	314.1	31.8	312.6	344.5	1526.8	559.4	354.0	913.5	58.1	307.5	25.8	391.4	250.2	40.6	913.5	314.1	344.5	0.0	295.5
3/19/2010	2251.8	1.8	314.3	31.8	309.2	341.0	1740.6	554.8	354.0	908.8	58.1	307.5	25.8	391.4	-132.0	40.6	908.8	314.3	341.0	0.0	294.1
3/20/2010	2375.5	3.3	314.3	31.8	267.7	299.5	1620.7	528.5	354.0	882.5	58.1	307.5	25.8	391.4	98.1	40.6	882.5	314.3	299.5	0.0	309.3
3/21/2010	2610.9	0.8	314.2	31.8	260.4	292.2	1466.4	527.9	354.0	881.9	58.1	307.5	25.8	391.4	478.3	40.6	881.9	314.2	292.2	0.0	316.2
3/22/2010	2605.3	3.0	314.2	31.8	276.8	308.6	1491.0	549.8	354.0	903.9	58.1	307.5	25.8	391.4	444.9	40.6	903.9	314.2	308.6	0.0	321.6
3/23/2010	3023.8	0.7	314.3	31.8	266.8	298.6	1563.7	563.4	354.0	917.5	58.1	307.5	25.8	391.4	764.9	40.6	917.5	314.3	298.6	0.0	345.1
3/24/2010	3724.5	0.8	315.2	31.8	252.4	284.2	1503.9	588.3	354.0	942.4	58.1	307.5	25.8	391.4	1487.0	40.6	942.4	315.2	284.2	0.0	383.6
3/25/2010	3554.5	1.0	315.3	31.8	286.0	317.8	1578.4	629.7	354.0	983.7	58.1	307.5	25.8	391.4	1234.9	40.6	983.7	315.3	317.8	0.0	391.3
3/26/2010	3374.1	3.0	315.9	31.8	283.7	315.5	1781.0	626.1	354.0	980.1	58.1	307.5	25.8	391.4	855.9	40.6	980.1	315.9	315.5	0.0	389.4
3/27/2010	3377.6	4.4	323.2	31.8	267.5	299.3	1586.8	597.5	354.0	951.5	58.1	307.5	25.8	391.4	1074.8	40.6	951.5	323.2	299.3	0.0	369.7
3/28/2010	3616.6	1.4	323.4	31.8	0.0	31.8	1289.4	587.0	354.0	941.0	58.1	307.5	25.8	391.4	1351.5	40.6	941.0	323.4	31.8	0.0	626.4
3/29/2010	3855.6	1.5	323.8	31.8	320.5	352.4	1412.6	623.2	354.0	977.2	58.1	307.5	25.8	391.4	1751.9	40.6	977.2	323.8	352.4	0.0	341.6
3/30/2010	3924.6	0.6	324.3	31.8	337.2	369.0	1740.7	657.9	354.0	1011.9	58.1	307.5	25.8	391.4	1474.4	40.6	1011.9	324.3	369.0	0.0	359.3
3/31/2010	3964.3	0.3	326.1	31.8	310.4	342.2	1834.1	661.1	354.0	1015.1	58.1	307.5	25.8	391.4	1392.3	40.6	1015.1	326.1	342.2	0.0	387.4
4/1/2010	3937.4	0.5	390.4	31.8	293.8	325.6	1744.0	644.2	354.0	998.2	58.1	307.5	56.8	422.4	1489.3	40.6	998.2	390.4	325.6	0.0	322.8
4/2/2010	3743.1	2.2	403.3	31.8	302.8	334.6	1599.2	614.8	354.0	968.8	58.1	307.5	56.8	422.4	1492.9	40.6	968.8	403.3	334.6	0.0	271.5
4/3/2010	3612.5	1.7	411.1	31.8	298.3	330.1	1414.0	588.8	354.0	942.8	58.1	307.5	56.8	422.4	1576.2	40.6	942.8	411.1	330.1	0.0	242.2
4/4/2010	3617.5	2.4	416.3	31.8	344.6	376.4	1373.9	582.7	354.0	936.7	58.1	307.5	56.8	422.4	1679.6	40.6	936.7	416.3	376.4	0.0	184.6
4/5/2010	3839.9	3.9	415.2	31.8	337.2	369.0	1384.2	591.8	354.0	945.9	58.1	307.5	56.8	422.4	1875.6	40.6	945.9	415.2	369.0	0.0	202.3
4/6/2010	4038.4	3.3	423.6	31.8	345.6	377.5	1425.1	611.7	354.0	965.8	58.1	307.5	56.8	422.4	2029.5	40.6	965.8	423.6	377.5	0.0	205.3
4/7/2010	4272.1	2.0	424.6	31.8	345.7	377.5	1511.2	631.0	354.0	985.1	58.1	307.5	56.8	422.4	2157.5	40.6	985.1	424.6	377.5	0.0	223.5
4/8/2010	4297.7	0.7	425.8	31.8	348.6	380.4	1582.3	642.6	354.0	996.6	58.1	307.5	56.8	422.4	2103.3	40.6	996.6	425.8	380.4	0.0	231.1
4/9/2010	3875.9	0.1	431.4	31.8	329.9	361.7	1583.1	627.6	354.0	981.6	58.1	307.5	56.8	422.4	1682.0	40.6	981.6	431.4	361.7	0.0	229.1
4/10/2010	3644.8	0.6	456.3	31.8	314.2	346.0	1432.5	587.1	354.0	941.1	58.1	307.5	56.8	422.4	1651.7	40.6	941.1	456.3	346.0	0.0	179.4
4/11/2010	3651.1	3.9	460.6	31.8	323.5	355.3	1221.9	563.2	354.0	917.2	58.1	307.5	56.8	422.4	1909.4	40.6	917.2	460.6	355.3	0.0	142.0
4/12/2010	3541.8	3.8	460.6	31.8	313.1	344.9	1183.1	563.2	354.0	917.2	58.1	307.5	56.8	422.4	1828.5	40.6	917.2	460.6	344.9	0.0	152.3
4/13/2010	3450.7	0.7	460.2	31.8	332.4	364.3	1207.2	557.0	354.0	911.0	58.1	307.5	56.8	422.4	1735.2	40.6	911.0	460.2			



Table F1-5: Local Basin Scale Water Budget Equation      (Units = Acre-Feet)

Caballo Reservoir to Downstream of American Dam																					
	Surface Water Budget															Groundwater Budget					
	Qus	P	Qp			Qgwrf	Qds			Qgwr				ET	ΔSsw	Qgwus	Qgwr	Qp	Qgwrf	Qgwds	ΔSgw
				MODFLOW Groundwater Return Flow to Rio Grande	MODFLOW 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
Date	River Below Caballo Dam	Precipitation Flows In River Channel	Pumping																		
5/26/2010	3266.6	1.4	497.4	31.8	182.8	214.6	864.8	501.7	354.0	855.7	58.1	307.5	89.2	454.8	1804.7	40.6	855.7	497.4	214.6	0.0	184.3
5/27/2010	3096.4	5.7	497.4	31.8	188.5	220.3	933.9	512.3	354.0	866.3	58.1	307.5	89.2	454.8	1564.8	40.6	866.3	497.4	220.3	0.0	189.2
5/28/2010	2825.2	3.6	497.9	31.8	175.9	207.7	1005.2	501.4	354.0	855.4	58.1	307.5	89.2	454.8	1219.1	40.6	855.4	497.9	207.7	0.0	190.4
5/29/2010	2703.9	1.9	498.9	31.8	163.3	195.2	936.9	474.2	354.0	828.2	58.1	307.5	89.2	454.8	1179.9	40.6	828.2	498.9	195.2	0.0	174.8
5/30/2010	2703.7	1.6	498.9	31.8	171.1	202.9	848.6	457.7	354.0	811.8	58.1	307.5	89.2	454.8	1291.9	40.6	811.8	498.9	202.9	0.0	150.6
5/31/2010	2798.7	3.2	499.0	31.8	167.3	199.1	791.5	450.4	354.0	804.4	58.1	307.5	89.2	454.8	1449.4	40.6	804.4	499.0	199.1	0.0	146.9
6/1/2010	2978.1	3.5	514.8	31.8	158.7	190.5	755.1	443.0	354.0	797.0	58.1	307.5	91.7	457.3	1677.5	40.6	797.0	514.8	190.5	0.0	132.3
6/2/2010	3378.2	3.3	525.9	31.8	170.4	202.2	734.1	445.7	354.0	799.7	58.1	307.5	91.7	457.3	2118.4	40.6	799.7	525.9	202.2	0.0	112.3
6/3/2010	3606.7	4.7	531.4	31.8	165.6	197.5	673.7	482.9	354.0	837.0	58.1	307.5	91.7	457.3	2372.3	40.6	837.0	531.4	197.5	0.0	148.7
6/4/2010	3722.1	3.3	521.4	31.8	177.8	209.7	885.5	529.2	354.0	883.3	58.1	307.5	91.7	457.3	2230.4	40.6	883.3	521.4	209.7	0.0	192.8
6/5/2010	3809.8	0.9	521.4	31.8	174.5	206.3	976.4	558.1	354.0	912.1	58.1	307.5	91.7	457.3	2192.6	40.6	912.1	521.4	206.3	0.0	225.0
6/6/2010	3797.9	2.9	521.4	31.8	225.9	257.8	1147.1	593.5	354.0	947.5	58.1	307.5	91.7	457.3	2028.1	40.6	947.5	521.4	257.8	0.0	208.9
6/7/2010	4099.1	8.5	522.7	31.8	241.0	272.8	1387.4	615.3	354.0	969.3	58.1	307.5	91.7	457.3	2089.1	40.6	969.3	522.7	272.8	0.0	214.4
6/8/2010	4281.2	3.4	523.1	31.8	231.9	263.7	1434.9	639.9	354.0	994.0	58.1	307.5	91.7	457.3	2185.2	40.6	994.0	523.1	263.7	0.0	247.8
6/9/2010	4271.3	2.1	523.0	31.8	263.7	295.5	1605.0	666.6	354.0	1020.7	58.1	307.5	91.7	457.3	2008.9	40.6	1020.7	523.0	295.5	0.0	242.8
6/10/2010	4147.2	8.1	523.0	31.8	242.3	274.1	1718.6	665.1	354.0	1019.2	58.1	307.5	91.7	457.3	1757.4	40.6	1019.2	523.0	274.1	0.0	262.6
6/11/2010	4035.7	4.0	523.2	31.8	262.6	294.4	1681.3	646.3	354.0	1000.3	58.1	307.5	91.7	457.3	1718.3	40.6	1000.3	523.2	294.4	0.0	223.4
6/12/2010	4032.2	4.1	518.6	31.8	244.7	276.5	1560.4	629.1	354.0	983.1	58.1	307.5	91.7	457.3	1830.5	40.6	983.1	518.6	276.5	0.0	228.6
6/13/2010	4033.2	2.3	518.6	31.8	254.1	285.9	1473.0	641.9	354.0	995.9	58.1	307.5	91.7	457.3	1913.8	40.6	995.9	518.6	285.9	0.0	232.0
6/14/2010	4193.6	5.1	518.6	31.8	251.2	283.0	1669.8	662.7	354.0	1016.8	58.1	307.5	91.7	457.3	1856.4	40.6	1016.8	518.6	283.0	0.0	255.8
6/15/2010	4387.5	6.9	542.1	31.8	257.7	289.5	1729.0	675.1	354.0	1029.2	58.1	307.5	91.7	457.3	2010.6	40.6	1029.2	542.1	289.5	0.0	238.2
6/16/2010	4244.3	6.2	542.1	31.8	257.6	289.4	1779.3	685.0	354.0	1039.0	58.1	307.5	91.7	457.3	1806.3	40.6	1039.0	542.1	289.4	0.0	248.1
6/17/2010	4456.7	8.2	549.6	31.8	273.7	305.5	1859.3	681.1	354.0	1035.1	58.1	307.5	91.7	457.3	1968.4	40.6	1035.1	549.6	305.5	0.0	220.6
6/18/2010	4242.0	13.5	549.5	31.8	253.1	284.9	1714.2	680.6	354.0	1034.6	58.1	307.5	91.7	457.3	1883.8	40.6	1034.6	549.5	284.9	0.0	240.8
6/19/2010	4146.3	3.9	549.5	31.8	247.6	279.4	1751.2	670.3	354.0	1024.4	58.1	307.5	91.7	457.3	1746.2	40.6	1024.4	549.5	279.4	0.0	236.0
6/20/2010	4153.5	8.6	549.5	31.8	245.3	277.2	1615.3	655.3	354.0	1009.3	58.1	307.5	91.7	457.3	1906.9	40.6	1009.3	549.5	277.2	0.0	223.3
6/21/2010	4344.8	3.6	549.5	31.8	254.1	285.9	1546.6	651.9	354.0	1005.9	58.1	307.5	91.7	457.3	2174.0	40.6	1005.9	549.5	285.9	0.0	211.1
6/22/2010	4517.5	3.9	546.8	31.8	245.5	277.3	1533.5	653.0	354.0	1007.1	58.1	307.5	91.7	457.3	2347.6	40.6	1007.1	546.8	277.3	0.0	223.5
6/23/2010	4519.9	6.8	547.1	31.8	238.7	270.5	1506.2	661.1	354.0	1015.1	58.1	307.5	91.7	457.3	2365.7	40.6	1015.1	547.1	270.5	0.0	238.1
6/24/2010	4512.1	6.7	547.1	31.8	240.2	272.1	1569.4	665.1	354.0	1019.1	58.1	307.5	91.7	457.3	2292.2	40.6	1019.1	547.1	272.1	0.0	240.5
6/25/2010	4682.4	5.1	545.7	31.8	235.9	267.8	1535.8	664.7	354.0	1018.8	58.1	307.5	91.7	457.3	2489.1	40.6	1018.8	545.7	267.8	0.0	245.9
6/26/2010	4801.6	6.0	545.6	31.8	252.0	283.9	1547.2	685.6	354.0	1039.6	58.1	307.5	91.7	457.3	2592.9	40.6	1039.6	545.6	283.9	0.0	250.8
6/27/2010	4793.3	12.7	543.3	31.8	284.0	315.9	1758.7	711.0	354.0	1065.0	58.1	307.5	91.7								

Table F1-5: Local Basin Scale Water Budget Equation      (Units = Acre-Feet)

Caballo Reservoir to Downstream of American Dam																					
	Surface Water Budget															Groundwater Budget					
	Qus	P	Qp			Qgwrf	Qds			Qgwr				ET	ΔSsw	Qgwus	Qgwr	Qp	Qgwrf	Qgwds	ΔSgw
	River Below Caballo Dam	Precipitation Flows in River Channel	Pumping	MODFLOW Groundwater Return Flow to Rio Grande	MODFLOW 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
8/9/2010	4185.3	18.1	455.6	31.8	274.8	306.6	1398.9	611.6	354.0	965.6	58.1	307.5	64.1	429.7	2171.4	40.6	965.6	455.6	306.6	0.0	244.0
8/10/2010	4315.0	16.6	452.0	31.8	315.4	347.2	1422.0	625.0	354.0	979.0	58.1	307.5	64.1	429.7	2300.1	40.6	979.0	452.0	347.2	0.0	220.4
8/11/2010	4219.7	20.3	455.5	31.8	317.5	349.3	1524.7	638.0	354.0	992.0	58.1	307.5	64.1	429.7	2098.4	40.6	992.0	455.5	349.3	0.0	227.9
8/12/2010	4204.8	24.7	456.5	31.8	288.4	320.2	1544.6	626.4	354.0	980.4	58.1	307.5	64.1	429.7	2051.4	40.6	980.4	456.5	320.2	0.0	244.3
8/13/2010	4083.3	21.2	457.9	31.8	277.7	309.6	1411.1	611.1	354.0	965.1	58.1	307.5	64.1	429.7	2066.0	40.6	965.1	457.9	309.6	0.0	238.3
8/14/2010	3964.0	28.8	467.7	31.8	286.5	318.4	1368.0	601.7	354.0	955.7	58.1	307.5	64.1	429.7	2025.4	40.6	955.7	467.7	318.4	0.0	210.2
8/15/2010	3952.3	20.8	467.7	31.8	277.2	309.1	1309.0	611.8	354.0	965.8	58.1	307.5	64.1	429.7	2045.3	40.6	965.8	467.7	309.1	0.0	229.7
8/16/2010	4044.2	17.1	467.7	31.8	298.9	330.7	1495.9	628.6	354.0	982.6	58.1	307.5	64.1	429.7	1951.5	40.6	982.6	467.7	330.7	0.0	224.8
8/17/2010	4132.1	13.8	467.7	31.8	289.5	321.3	1529.4	633.2	354.0	987.2	58.1	307.5	64.1	429.7	1988.5	40.6	987.2	467.7	321.3	0.0	238.8
8/18/2010	4120.7	16.4	468.0	31.8	293.0	324.9	1514.4	634.2	354.0	988.2	58.1	307.5	64.1	429.7	1997.6	40.6	988.2	468.0	324.9	0.0	236.0
8/19/2010	3928.1	16.5	467.9	31.8	310.0	341.8	1497.3	631.5	354.0	985.5	58.1	307.5	64.1	429.7	1841.8	40.6	985.5	467.9	341.8	0.0	216.4
8/20/2010	4022.6	22.4	467.9	31.8	303.8	335.6	1500.0	629.7	354.0	983.7	58.1	307.5	64.1	429.7	1935.1	40.6	983.7	467.9	335.6	0.0	220.8
8/21/2010	4179.1	16.2	467.9	31.8	305.9	337.8	1514.7	632.7	354.0	986.7	58.1	307.5	64.1	429.7	2069.8	40.6	986.7	467.9	337.8	0.0	221.6
8/22/2010	4163.5	19.0	467.9	31.8	310.9	342.7	1530.2	648.3	354.0	1002.3	58.1	307.5	64.1	429.7	2030.9	40.6	1002.3	467.9	342.7	0.0	232.3
8/23/2010	3924.5	27.0	467.9	31.8	364.5	396.3	1709.7	655.8	354.0	1009.8	58.1	307.5	64.1	429.7	1666.4	40.6	1009.8	467.9	396.3	0.0	186.2
8/24/2010	3410.1	18.3	467.8	31.8	355.5	387.3	1728.4	640.9	354.0	995.0	58.1	307.5	64.1	429.7	1130.3	40.6	995.0	467.8	387.3	0.0	180.5
8/25/2010	3019.2	15.7	467.8	31.8	536.2	568.1	1772.3	625.1	354.0	979.1	58.1	307.5	64.1	429.7	889.6	40.6	979.1	467.8	568.1	0.0	-16.1
8/26/2010	3012.5	12.5	467.8	31.8	338.6	370.4	1683.4	578.3	354.0	932.3	58.1	307.5	64.1	429.7	817.8	40.6	932.3	467.8	370.4	0.0	134.8
8/27/2010	3150.7	15.1	467.7	31.8	277.4	309.3	1338.9	536.2	354.0	890.2	58.1	307.5	64.1	429.7	1283.9	40.6	890.2	467.7	309.3	0.0	153.9
8/28/2010	3192.7	8.0	467.6	31.8	264.0	295.8	1177.6	532.2	354.0	886.3	58.1	307.5	64.1	429.7	1470.5	40.6	886.3	467.6	295.8	0.0	163.5
8/29/2010	3059.6	10.9	467.4	31.8	277.4	309.3	1154.9	536.4	354.0	890.4	58.1	307.5	64.1	429.7	1372.1	40.6	890.4	467.4	309.3	0.0	154.4
8/30/2010	2870.3	16.6	467.4	31.8	280.8	312.6	1138.8	528.3	354.0	882.3	58.1	307.5	64.1	429.7	1216.2	40.6	882.3	467.4	312.6	0.0	142.8
8/31/2010	2539.3	14.3	467.4	31.8	266.9	298.7	1107.1	491.8	354.0	845.8	58.1	307.5	64.1	429.7	937.2	40.6	845.8	467.4	298.7	0.0	120.3
9/1/2010	2503.1	8.9	459.4	31.8	252.3	284.2	929.1	425.6	354.0	779.6	58.1	307.5	51.6	417.2	1129.7	40.6	779.6	459.4	284.2	0.0	76.6
9/2/2010	2566.5	16.9	458.4	31.8	240.3	272.1	692.5	362.5	354.0	716.5	58.1	307.5	51.6	417.2	1487.7	40.6	716.5	458.4	272.1	0.0	26.6
9/3/2010	2824.4	10.6	458.1	31.8	252.0	283.9	494.8	332.3	354.0	686.3	58.1	307.5	51.6	417.2	1978.6	40.6	686.3	458.1	283.9	0.0	-15.0
9/4/2010	3250.4	14.7	457.8	31.8	252.3	284.1	371.2	346.1	354.0	700.1	58.1	307.5	51.6	417.2	2518.5	40.6	700.1	457.8	284.1	0.0	-1.1
9/5/2010	3221.8	20.1	457.8	31.8	265.8	297.6	384.8	408.3	354.0	762.3	58.1	307.5	51.6	417.2	2432.9	40.6	762.3	457.8	297.6	0.0	47.6
9/6/2010	3192.5	16.9	456.2	31.8	251.7	283.6	583.0	465.8	354.0	819.8	58.1	307.5	51.6	417.2	2129.1	40.6	819.8	456.2	283.6	0.0	120.7
9/7/2010	3288.2	18.1	456.3	31.8	230.8	262.7	855.7	467.9	354.0	821.9	58.1	307.5	51.6	417.2	1930.3	40.6	821.9	456.3	262.7	0.0	143.6
9/8/2010	3224.4	8.6	457.0	31.8	227.0	258.8	788.2	461.3	354.0	815.3	58.1	307.5	51.6	417.2	1928.1	40.6	815.3	457.0	258.8	0.0	140.1
9/9/2010	2599.2	8.5	457.2	31.8	229.4	261.2	734.3	449.6	354.0	803.6	58.1	307.5	51.6	417.2	1370.9	40.6	803.6	457.2	261.2	0.0	125.9
9/10/2010	1886.0	12.8	456.9	31.8	234.5	266.3	744.6	418.1	354.0	772.1	58.1	307.5	51.6	417.2	688.0	40.6	772.1	456.9	266.3	0.0	89.6
9/11/2010	1562.																				



Table F1-5: Local Basin Scale Water Budget Equation      (Units = Acre-Feet)

Caballo Reservoir to Downstream of American Dam																					
	Surface Water Budget															Groundwater Budget					
	Qus	P	Qp			Qgwrf	Qds			Qgwr				ET	ΔSsw	Qgwus	Qgwr	Qp	Qgwrf	Qgwds	ΔSgw
				MODFLOW Groundwater Return Flow to Rio Grande	MODFLOW 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	Groundwater Return Flow = Groundwater RF + Irrigation RRF	Downstream Groundwater Outflow	Change in Vadose Zone and Groundwater Storage	
Date	River Below Caballo Dam	Precipitation Flows In River Channel	Pumping																		
10/23/2010	158.7	12.4	319.8	31.8	248.2	280.0	236.9	142.7	354.0	496.7	58.1	307.5	0.0	365.6	-328.3	40.6	496.7	319.8	280.0	0.0	-62.4
10/24/2010	158.7	8.3	319.6	31.8	254.8	286.6	240.4	142.7	354.0	496.7	58.1	307.5	0.0	365.6	-329.4	40.6	496.7	319.6	286.6	0.0	-69.0
10/25/2010	158.7	6.5	319.7	31.8	261.1	292.9	247.5	141.5	354.0	495.5	58.1	307.5	0.0	365.6	-330.8	40.6	495.5	319.7	292.9	0.0	-76.5
10/26/2010	154.3	8.2	320.6	31.8	263.9	295.7	252.2	141.4	354.0	495.5	58.1	307.5	0.0	365.6	-334.4	40.6	495.5	320.6	295.7	0.0	-80.3
10/27/2010	154.5	9.9	320.4	31.8	271.5	303.3	254.6	140.8	354.0	494.8	58.1	307.5	0.0	365.6	-326.8	40.6	494.8	320.4	303.3	0.0	-88.3
10/28/2010	154.6	10.5	319.3	31.8	277.3	309.1	260.8	139.9	354.0	493.9	58.1	307.5	0.0	365.6	-326.9	40.6	493.9	319.3	309.1	0.0	-93.8
10/29/2010	154.6	5.0	318.8	31.8	288.5	320.3	266.5	139.7	354.0	493.7	58.1	307.5	0.0	365.6	-327.1	40.6	493.7	318.8	320.3	0.0	-104.8
10/30/2010	154.6	5.5	318.8	31.8	301.1	333.0	276.0	140.5	354.0	494.5	58.1	307.5	0.0	365.6	-324.3	40.6	494.5	318.8	333.0	0.0	-116.6
10/31/2010	154.7	6.4	313.0	31.8	308.3	340.1	285.8	141.2	354.0	495.2	58.1	307.5	0.0	365.6	-332.4	40.6	495.2	313.0	340.1	0.0	-117.2
11/1/2010	154.8	5.7	308.7	59.1	333.8	392.9	292.5	142.3	3.7	146.0	18.4	131.8	0.0	150.2	273.4	87.8	146.0	308.7	392.9	0.0	-467.7
11/2/2010	154.9	4.0	296.7	59.1	344.6	403.7	314.4	143.8	3.7	147.5	18.4	131.8	0.0	150.2	247.2	87.8	147.5	296.7	403.7	0.0	-465.1
11/3/2010	155.0	7.2	293.0	59.1	342.4	401.5	323.8	143.5	3.7	147.2	18.4	131.8	0.0	150.2	235.6	87.8	147.2	293.0	401.5	0.0	-459.4
11/4/2010	155.0	3.6	291.9	59.1	365.6	424.7	327.0	144.4	3.7	148.1	18.4	131.8	0.0	150.2	250.0	87.8	148.1	291.9	424.7	0.0	-480.7
11/5/2010	155.1	4.7	292.1	59.1	372.5	431.6	340.4	147.4	3.7	151.1	18.4	131.8	0.0	150.2	242.0	87.8	151.1	292.1	431.6	0.0	-484.8
11/6/2010	155.2	1.8	292.0	59.1	376.0	435.1	347.2	150.0	3.7	153.7	18.4	131.8	0.0	150.2	233.1	87.8	153.7	292.0	435.1	0.0	-485.6
11/7/2010	155.2	4.4	292.0	59.1	375.5	434.6	350.0	151.3	3.7	155.1	18.4	131.8	0.0	150.2	231.1	87.8	155.1	292.0	434.6	0.0	-483.7
11/8/2010	155.3	5.2	292.0	59.1	387.6	446.7	353.4	150.4	3.7	154.2	18.4	131.8	0.0	150.2	241.5	87.8	154.2	292.0	446.7	0.0	-496.7
11/9/2010	155.3	2.0	290.0	59.1	405.9	465.0	364.1	151.2	3.7	154.9	18.4	131.8	0.0	150.2	243.1	87.8	154.9	290.0	465.0	0.0	-512.3
11/10/2010	155.5	1.6	289.9	59.1	421.7	480.8	377.0	155.0	3.7	158.8	18.4	131.8	0.0	150.2	241.9	87.8	158.8	289.9	480.8	0.0	-524.2
11/11/2010	155.5	3.8	298.6	59.1	430.7	489.9	385.8	161.7	3.7	165.4	18.4	131.8	0.0	150.2	246.4	87.8	165.4	298.6	489.9	0.0	-535.2
11/12/2010	155.6	5.9	290.9	59.1	437.9	497.1	398.3	163.8	3.7	167.5	18.4	131.8	0.0	150.2	233.4	87.8	167.5	290.9	497.1	0.0	-532.6
11/13/2010	155.6	4.9	284.1	59.1	452.6	511.7	404.1	168.5	3.7	172.2	18.4	131.8	0.0	150.2	229.8	87.8	172.2	284.1	511.7	0.0	-535.7
11/14/2010	155.7	12.3	284.1	59.1	469.8	528.9	411.2	174.0	3.7	177.7	18.4	131.8	0.0	150.2	241.9	87.8	177.7	284.1	528.9	0.0	-547.4
11/15/2010	156.7	4.4	284.1	59.1	492.6	551.7	424.3	176.1	3.7	179.9	18.4	131.8	0.0	150.2	242.5	87.8	179.9	284.1	551.7	0.0	-568.0
11/16/2010	157.4	5.3	284.1	59.1	499.6	558.7	434.7	178.4	3.7	182.2	18.4	131.8	0.0	150.2	238.4	87.8	182.2	284.1	558.7	0.0	-572.7
11/17/2010	157.3	2.2	283.6	59.1	506.0	565.1	451.0	180.6	3.7	184.3	18.4	131.8	0.0	150.2	222.7	87.8	184.3	283.6	565.1	0.0	-576.5
11/18/2010	157.4	2.0	286.8	59.1	488.8	548.0	451.3	180.7	3.7	184.4	18.4	131.8	0.0	150.2	208.3	87.8	184.4	286.8	548.0	0.0	-562.5
11/19/2010	157.6	2.1	286.8	59.1	500.4	559.5	445.0	180.7	3.7	184.4	18.4	131.8	0.0	150.2	226.5	87.8	184.4	286.8	559.5	0.0	-574.1
11/20/2010	157.5	0.7	286.2	59.1	519.6	578.8	448.8	182.2	3.7	185.9	18.4	131.8	0.0	150.2	238.3	87.8	185.9	286.2	578.8	0.0	-591.2
11/21/2010	157.9	0.9	286.2	59.1	526.8	585.9	459.8	184.2	3.7	187.9	18.4	131.8	0.0	150.2	233.1	87.8	187.9	286.2	585.9	0.0	-596.3
11/22/2010	158.0	2.3	286.2	59.1	525.5	584.6	466.8	185.5	3.7	189.2	18.4	131.8	0.0	150.2	225.0	87.8	189.2	286.2	584.6	0.0	-593.8
11/23/2010	158.3	1.9	286.2	59.1	533.9	593.0	473.3	186.3	3.7	190.1	18.4	131.8	0.0	150.2	226.0	87.8	190.1	286.2	593.0	0.0	-601.4
11/24/2010	158.3	5.7	286.2	59.1	535.7	594.8	476.2	187.2	3.7	190.9	18.4	131.8	0.0	150.2	227.8	87.8	190.9	286.2	594.8	0.0	-602.3
11/25/2010	158.3	3.0	286.2	59.1	530.7	589.8	481.1	187.5	3.7</												

Table F1-5: Local Basin Scale Water Budget Equation      (Units = Acre-Feet)

Caballo Reservoir to Downstream of American Dam																					
	Surface Water Budget															Groundwater Budget					
	Q <sub>us</sub>	P	Q <sub>p</sub>			Q <sub>grwf</sub>	Q <sub>ds</sub>			Q <sub>grw</sub>				ET	ΔS <sub>sw</sub>	Q <sub>grwus</sub>	Q <sub>grw</sub>	Q <sub>p</sub>	Q <sub>grwf</sub>	Q <sub>grwds</sub>	ΔS <sub>gw</sub>
	River Below Caballo Dam	Precipitation Flows In River Channel	Pumping	MODFLOW Groundwater Return Flow to Rio Grande	MODFLOW Irrigation/ Drainage Return Flow	Groundwater Return Flow = Groundwater RF + Irrigation RRF	Downstream Channel Outflow, River Above American Dam	Channel Seepage (Q <sub>cs</sub> )	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
1/6/2011	175.4	5.5	383.6	59.1	146.5	205.6	138.2	147.1	3.7	150.8	18.4	131.8	0.0	150.2	330.9	87.8	150.8	383.6	205.6	0.0	-350.6
1/7/2011	215.4	5.2	394.2	59.1	149.7	208.8	137.4	148.0	3.7	151.8	18.4	131.8	0.0	150.2	384.3	87.8	151.8	394.2	208.8	0.0	-363.4
1/8/2011	215.4	5.4	407.6	59.1	152.3	211.4	138.5	152.1	3.7	155.8	18.4	131.8	0.0	150.2	395.4	87.8	155.8	407.6	211.4	0.0	-375.4
1/9/2011	215.5	3.9	409.9	59.1	151.0	210.1	139.6	159.2	3.7	162.9	18.4	131.8	0.0	150.2	386.7	87.8	162.9	409.9	210.1	0.0	-369.3
1/10/2011	216.8	3.1	413.8	59.1	151.7	210.8	141.0	160.9	3.7	164.6	18.4	131.8	0.0	150.2	388.6	87.8	164.6	413.8	210.8	0.0	-372.1
1/11/2011	218.9	5.9	432.2	59.1	151.6	210.7	142.7	161.7	3.7	165.5	18.4	131.8	0.0	150.2	409.3	87.8	165.5	432.2	210.7	0.0	-389.6
1/12/2011	217.1	4.6	455.8	59.1	152.4	211.5	145.3	162.3	3.7	166.1	18.4	131.8	0.0	150.2	427.5	87.8	166.1	455.8	211.5	0.0	-413.4
1/13/2011	214.0	5.6	456.5	59.1	159.7	218.8	149.2	163.1	3.7	166.8	18.4	131.8	0.0	150.2	428.8	87.8	166.8	456.5	218.8	0.0	-420.7
1/14/2011	214.4	3.1	458.6	59.1	163.2	222.3	154.0	163.4	3.7	167.2	18.4	131.8	0.0	150.2	427.1	87.8	167.2	458.6	222.3	0.0	-425.8
1/15/2011	214.5	3.3	460.9	59.1	162.2	221.3	156.0	163.3	3.7	167.0	18.4	131.8	0.0	150.2	426.9	87.8	167.0	460.9	221.3	0.0	-427.4
1/16/2011	214.8	1.1	471.5	59.1	161.5	220.6	156.6	163.1	3.7	166.8	18.4	131.8	0.0	150.2	434.4	87.8	166.8	471.5	220.6	0.0	-437.4
1/17/2011	214.8	4.4	473.1	59.1	5.5	64.6	151.3	159.6	3.7	163.3	18.4	131.8	0.0	150.2	292.1	87.8	163.3	473.1	64.6	0.0	-286.5
1/18/2011	214.8	6.9	481.6	59.1	109.8	168.9	126.0	141.8	3.7	145.5	18.4	131.8	0.0	150.2	450.6	87.8	145.5	481.6	168.9	0.0	-417.1
1/19/2011	120.1	3.7	485.6	59.1	65.9	125.0	82.1	147.9	3.7	151.7	18.4	131.8	0.0	150.2	350.5	87.8	151.7	485.6	125.0	0.0	-371.1
1/20/2011	84.1	4.2	494.2	59.1	53.3	112.4	99.4	137.0	3.7	140.7	18.4	131.8	0.0	150.2	304.7	87.8	140.7	494.2	112.4	0.0	-378.0
1/21/2011	0.0	4.5	521.2	59.1	51.5	110.6	89.4	95.8	3.7	99.5	18.4	131.8	0.0	150.2	297.1	87.8	99.5	521.2	110.6	0.0	-444.4
1/22/2011	0.0	3.7	523.1	59.1	59.5	118.7	76.2	83.6	3.7	87.3	18.4	131.8	0.0	150.2	331.8	87.8	87.3	523.1	118.7	0.0	-466.6
1/23/2011	0.0	1.3	523.1	59.1	69.3	128.5	70.7	87.6	3.7	91.4	18.4	131.8	0.0	150.2	340.7	87.8	91.4	523.1	128.5	0.0	-472.4
1/24/2011	0.0	3.7	523.4	59.1	81.1	140.2	67.7	95.0	3.7	98.7	18.4	131.8	0.0	150.2	350.8	87.8	98.7	523.4	140.2	0.0	-477.1
1/25/2011	0.0	4.8	524.4	59.1	84.5	143.6	74.2	103.3	3.7	107.0	18.4	131.8	0.0	150.2	341.3	87.8	107.0	524.4	143.6	0.0	-473.1
1/26/2011	43.4	3.1	525.3	59.1	79.0	138.1	82.1	119.7	3.7	123.4	18.4	131.8	0.0	150.2	354.2	87.8	123.4	525.3	138.1	0.0	-452.1
1/27/2011	273.7	3.5	528.2	59.1	53.9	113.0	90.1	111.9	3.7	115.6	18.4	131.8	0.0	150.2	562.4	87.8	115.6	528.2	113.0	0.0	-437.7
1/28/2011	183.4	4.2	523.8	59.1	56.0	115.1	81.7	102.0	3.7	105.7	18.4	131.8	0.0	150.2	488.9	87.8	105.7	523.8	115.1	0.0	-445.3
1/29/2011	183.4	2.7	526.8	59.1	61.9	121.0	71.6	117.4	3.7	121.1	18.4	131.8	0.0	150.2	491.2	87.8	121.1	526.8	121.0	0.0	-439.0
1/30/2011	183.5	3.6	526.7	59.1	69.7	128.8	67.3	127.9	3.7	131.6	18.4	131.8	0.0	150.2	493.5	87.8	131.6	526.7	128.8	0.0	-436.0
1/31/2011	183.6	5.7	526.7	59.1	79.5	138.7	71.6	127.8	3.7	131.5	18.4	131.8	0.0	150.2	501.5	87.8	131.5	526.7	138.7	0.0	-446.0
2/1/2011	183.7	2.6	527.5	59.1	82.8	141.9	89.5	130.9	3.7	134.6	18.4	131.8	0.0	150.2	481.4	87.8	134.6	527.5	141.9	0.0	-446.9
2/2/2011	183.8	3.3	528.0	59.1	65.9	125.0	88.7	132.1	3.7	135.9	18.4	131.8	0.0	150.2	465.3	87.8	135.9	528.0	125.0	0.0	-429.2
2/3/2011	183.5	4.0	527.8	59.1	65.8	125.0	80.5	130.9	3.7	134.6	18.4	131.8	0.0	150.2	474.9	87.8	134.6	527.8	125.0	0.0	-430.2
2/4/2011	183.1	4.7	527.7	59.1	70.0	129.1	79.1	130.4	3.7	134.1	18.4	131.8	0.0	150.2	481.2	87.8	134.1	527.7	129.1	0.0	-434.9
2/5/2011	183.1	6.0	527.8	59.1	77.5	136.7	80.3	131.7	3.7	135.4	18.4	131.8	0.0	150.2	487.7	87.8	135.4	527.8	136.7	0.0	-441.2
2/6/2011	183.1	2.7	528.5	59.1	87.3	146.4	85.1	133.2	3.7	136.9	18.4	131.8	0.0	150.2	488.6	87.8	136.9	528.5	146.4	0.0	-450.1
2/7/2011	183.2	2.8	529.3	59.1	84.4	143.5	93.1	134.9	3.7	138.6	18.4	131.8	0.0	150.2	476.9	87.8	138.6	529.3	143.5	0.0	-446.3
2/8/2011	265.6	4.6	529.5	59.1	87.9	147.0	93.4	137.8	3.7	141.5	18.4	131.8	0.0	150.2	561.5	87.8	141.5	529.5	147.0	0.0	-447.1
2/9/2011	178.9	5.0	529.4	59.1	86.6	145.7	91.3	142.9	3.7	146.6	18.4	131.8	0.0	150.2	471.0	87.8	146.6	529.4	145.7	0.0	-440.7
2/10/2011	261.8	3.2	529.6	59.1	72.8	132.0	92.0	152.2	3.7	155.9	18.4	131.8	0.0	150.2	528.6	87.8	155.9	529.6	132.0	0.0	-417.8
2/11/2011	168.5	3.1	538.7	59.1	59.6	118.7	91.8	140.8	3.7	144.5	18.4	131.8	0.0	150.2	442.4	87.8	144.5	538.7	118.7	0.0	-425.0
2/12/2011	168.6	8.4	546.4	59.1	56.7	115.8	88.5	133.0	3.7	136.7	18.4	131.8	0.0	150.2	463.8	87.8	136.7	546.4	115.8	0.0	-437.7
2/13/2011	168.6	3.6	546.4	59.1	60.9	120.0	82.8	125.3	3.7	129.0	18.4	131.8	0.0	150.2	476.6	87.8	129.0	546.4	120.0	0.0	-449.6
2/14/2011	168.6	5.3	546.6	59.1	63.6	122.7	75.7	116.3	3.7	120.1	18.4	131.8	0.0	150.2	497.2	87.8	120.1	546.6	122.7	0.0	-461.4
2/15/2011	160.3	2.7	547.1	59.1	65.3	124.4	81.9	113.5	3.7	117.2	18.4	131.8	0.0	150.2	485.2	87.8	117.2	547.1	124.4	0.0	-466.5
2/16/2011	0.0	3.4	547.1	59.1	66.6	125.7	76.8	93.5	3.7	97.3	18.4	131.8	0.0	150.2	351.9	87.8	97.3	547.1	125.7	0.0	-487.6
2/17/2011	0.0	5.4	547.7	59.1	66.7	125.8	76.2	92.3	3.7	96.1	18.4	131.8	0.0	150.2	356.5	87.8	96.1	547.7	125.8	0.0	-489.6
2/18/2011	0.0	1.9	548.5	59.1	63.6	122.7	76.5	86.8	3.7	90.5	18.4	131.8	0.0	150.2	356.0	87.8	90.5	548.5	122.7	0.0	-492.9
2/19/2011	0.0	2.2	549.3	59.1	63.5	122.6	76.6	82.1	3.7	85.9	18.4	131.8	0.0	150.2	361.5	87.8	85.9	549.3	122.6	0.0	-498.2
2/20/2011	0.0	4.1	549.3	59.1	63.2	122.4	72.4	82.0	3.7	85.7	18.4	131.8	0.0	150.2	367.5	87.8	85.7	549.3	122.4	0.0	-498.1
2/21/2011	0.0	7.2	549.3	59.1	66.6	125.7	70.7	82.2	3.7	85.9	18.4	131.8	0.0	150.2	375.6	87.8	85.9	549.3	125.7	0.0	-501.3
2/22/2011	0.0	3.3	549.3	59.1	68.6	127.7	74.5	81.2	3.7	85.0	18.4	131.8	0.0	150.2	370.7	87.8	85.0	549.3	127.7	0.0	-504.2
2/23/2011	0.0	4.4	550.8	59.1	94.5	153.7	79.8	79.6	3.7	83.3	18.4	131.8	0.0	150.2	395.6	87.8	83.3	550.8	153.7	0.0	-533.3
2/24/2011	0.0	6.1	550.9	59.1	95.7	154.8	92.6	80.6	3.7	84.4	18.4	131.8	0.0	150.2	384.7	87.8	84.4	550.9	154.8	0.0	-533.5
2/25/2011	0.0	4.3	552.0	59.1	92.7	151.8	97.4	81.9	3.7	85.6	18.4	131.8	0.0	150.2	375.0	87.8	85.6	552.0	151.8	0.0	-530.4
2/26/2011	0.0	2.7	552.3	59.1	88.3	147.4	96.5	81.9	3.7	85.6	18.4	131.8	0.0	150.2	370.2	87.8	85.6	552.3	147.4	0.0	-526.3
2/27/2011	0.0	1.2	551.9	59.1	91.0	150.1	94.0	81.7	3.7	85.4	18.4	131.8	0.0	150.2	373.7	87.8	85.4	551.9	150.1	0.0	-52

Table F1-5: Local Basin Scale Water Budget Equation      (Units = Acre-Feet)

Caballo Reservoir to Downstream of American Dam																					
	Surface Water Budget															Groundwater Budget					
	Qus	P	Qp			Qgwrf	Qds			Qgwr				ET	ΔSsw	Qgwus	Qgwr	Qp	Qgwrf	Qgwds	ΔSgw
	River Below Caballo Dam	Precipitation Flows In River Channel	Pumping	MODFLOW Groundwater Return Flow to Rio Grande	MODFLOW 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
3/22/2011	2926.4	3.0	603.6	31.8	131.6	163.4	2039.8	663.7	354.0	1017.7	58.1	307.5	25.8	391.4	247.4	40.6	1017.7	603.6	163.4	0.0	291.4
3/23/2011	2975.3	0.7	604.0	31.8	133.9	165.7	2164.3	692.6	354.0	1046.6	58.1	307.5	25.8	391.4	143.4	40.6	1046.6	604.0	165.7	0.0	317.5
3/24/2011	2978.2	0.8	604.0	31.8	129.2	161.1	2341.6	708.7	354.0	1062.7	58.1	307.5	25.8	391.4	-51.7	40.6	1062.7	604.0	161.1	0.0	338.3
3/25/2011	3008.7	1.0	604.0	31.8	136.5	168.3	2393.1	712.5	354.0	1066.5	58.1	307.5	25.8	391.4	-69.0	40.6	1066.5	604.0	168.3	0.0	334.8
3/26/2011	3014.9	3.0	604.1	31.8	141.5	173.3	2405.7	667.4	354.0	1021.4	58.1	307.5	25.8	391.4	-23.2	40.6	1021.4	604.1	173.3	0.0	284.6
3/27/2011	3054.5	4.4	604.3	31.8	174.9	206.7	2348.9	460.7	354.0	814.7	58.1	307.5	25.8	391.4	314.9	40.6	814.7	604.3	206.7	0.0	44.4
3/28/2011	3094.2	1.4	604.4	31.8	183.6	215.4	1224.8	288.4	354.0	642.4	58.1	307.5	25.8	391.4	1656.9	40.6	642.4	604.4	215.4	0.0	-136.8
3/29/2011	3133.9	1.5	602.4	31.8	182.1	213.9	739.7	226.1	354.0	580.1	58.1	307.5	25.8	391.4	2240.5	40.6	580.1	602.4	213.9	0.0	-195.6
3/30/2011	3160.7	0.6	603.0	31.8	151.5	183.3	549.8	248.2	354.0	602.2	58.1	307.5	25.8	391.4	2404.2	40.6	602.2	603.0	183.3	0.0	-143.5
3/31/2011	2765.4	0.3	603.8	31.8	164.1	195.9	471.8	413.4	354.0	767.4	58.1	307.5	25.8	391.4	1934.8	40.6	767.4	603.8	195.9	0.0	8.4
4/1/2011	2158.1	0.5	635.2	31.8	164.0	195.8	477.3	627.3	354.0	981.3	58.1	307.5	56.8	422.4	1108.6	40.6	981.3	635.2	195.8	0.0	190.8
4/2/2011	1919.3	2.2	756.2	31.8	112.8	144.6	1826.7	572.6	354.0	926.6	58.1	307.5	56.8	422.4	-353.4	40.6	926.6	756.2	144.6	0.0	66.4
4/3/2011	1931.9	1.7	761.8	31.8	94.8	126.6	1373.3	510.6	354.0	864.6	58.1	307.5	56.8	422.4	161.7	40.6	864.6	761.8	126.6	0.0	16.8
4/4/2011	2105.2	2.4	765.5	31.8	97.9	129.7	1147.8	497.8	354.0	851.8	58.1	307.5	56.8	422.4	580.8	40.6	851.8	765.5	129.7	0.0	-2.8
4/5/2011	2319.7	3.9	770.9	31.8	101.3	133.1	1163.3	522.0	354.0	876.0	58.1	307.5	56.8	422.4	765.9	40.6	876.0	770.9	133.1	0.0	12.7
4/6/2011	2414.8	3.3	782.9	31.8	117.7	149.6	1315.1	558.9	354.0	912.9	58.1	307.5	56.8	422.4	700.2	40.6	912.9	782.9	149.6	0.0	21.1
4/7/2011	2152.0	2.0	813.2	31.8	119.0	150.9	1494.7	575.1	354.0	929.1	58.1	307.5	56.8	422.4	271.8	40.6	929.1	813.2	150.9	0.0	5.7
4/8/2011	1981.2	0.7	823.6	31.8	116.5	148.3	1527.8	554.9	354.0	908.9	58.1	307.5	56.8	422.4	94.7	40.6	908.9	823.6	148.3	0.0	-22.3
4/9/2011	1770.2	0.1	856.0	31.8	100.9	132.7	1384.4	518.9	354.0	872.9	58.1	307.5	56.8	422.4	79.3	40.6	872.9	856.0	132.7	0.0	-75.2
4/10/2011	1659.5	0.6	860.6	31.8	104.8	136.7	1254.2	500.0	354.0	854.0	58.1	307.5	56.8	422.4	126.9	40.6	854.0	860.6	136.7	0.0	-102.7
4/11/2011	1665.1	3.9	870.6	31.8	111.9	143.7	1315.0	493.2	354.0	847.2	58.1	307.5	56.8	422.4	98.7	40.6	847.2	870.6	143.7	0.0	-126.4
4/12/2011	1534.6	3.8	872.4	31.8	111.4	143.3	1316.4	487.3	354.0	841.3	58.1	307.5	56.8	422.4	-26.1	40.6	841.3	872.4	143.3	0.0	-133.7
4/13/2011	1435.0	0.7	878.1	31.8	113.5	145.3	1287.2	475.2	354.0	829.2	58.1	307.5	56.8	422.4	-79.8	40.6	829.2	878.1	145.3	0.0	-153.6
4/14/2011	1442.7	1.2	878.4	31.8	108.1	139.9	1230.4	456.0	354.0	810.0	58.1	307.5	56.8	422.4	-0.5	40.6	810.0	878.4	139.9	0.0	-167.7
4/15/2011	1445.5	3.5	941.5	31.8	106.4	138.2	1141.1	445.4	354.0	799.5	58.1	307.5	56.8	422.4	165.7	40.6	799.5	941.5	138.2	0.0	-239.6
4/16/2011	1671.9	1.0	945.3	31.8	104.3	136.1	1100.5	448.0	354.0	802.0	58.1	307.5	56.8	422.4	429.4	40.6	802.0	945.3	136.1	0.0	-238.8
4/17/2011	1992.8	3.1	945.4	31.8	105.0	136.8	1103.8	470.6	354.0	824.6	58.1	307.5	56.8	422.4	727.4	40.6	824.6	945.4	136.8	0.0	-217.0
4/18/2011	2076.4	0.7	945.4	31.8	112.0	143.8	1184.4	505.8	354.0	859.8	58.1	307.5	56.8	422.4	699.6	40.6	859.8	945.4	143.8	0.0	-188.8
4/19/2011	2153.1	0.8	946.1	31.8	111.7	143.5	1252.3	529.1	354.0	883.1	58.1	307.5	56.8	422.4	685.7	40.6	883.1	946.1	143.5	0.0	-165.9
4/20/2011	2068.6	1.2	952.4	31.8	112.3	144.2	1335.3	539.7	354.0	893.8	58.1	307.5	56.8	422.4	514.9	40.6	893.8	952.4	144.2	0.0	-162.2
4/21/2011	1834.1	0.8	954.6	31.8	115.3	147.1	1399.1	535.4	354.0	889.4	58.1	307.5	56.8	422.4	225.7	40.6	889.4	954.6	147.1	0.0	-171.7
4/22/2011	1561.7	2.5	956.4	31.8	105.0	136.9	1359.9	505.4	354.0	859.4	58.1	307.5	56.8	422.4	15.7	40.6	859.4	956.4	136.9	0.0	-193.2
4/23/2011	1575.3	4.9	951.8	31.8	88.3	120.1	1208.3	463.8	354.0	817.8	58.1	307.5	56.8	422.4	203.6	40.6	817.8	951.8	120.1	0.0	-213.4
4/24/2011	1731.7	3.4	951.8	31.8	84.4	116.2	1021.9	440.9	354.0	794.9	58.1	307.5	56.8	422.4	563.9	40.6	794.9	951.8			



Table F1-5: Local Basin Scale Water Budget Equation      (Units = Acre-Feet)

Caballo Reservoir to Downstream of American Dam																					
	Surface Water Budget															Groundwater Budget					
	Qus	P	Qp			Qgwr	Qds			Qgwr				ET	ΔSsw	Qgwus	Qgwr	Qp	Qgwr	Qgwds	ΔSgw
	River Below Caballo Dam	Precipitation Flows In River Channel	Pumping	MODFLOW Groundwater Return Flow to Rio Grande	MODFLOW 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
Date																					
6/5/2011	3209.1	0.9	969.4	31.8	68.1	99.9	1151.1	561.4	354.0	915.4	58.1	307.5	91.7	457.3	1755.6	40.6	915.4	969.4	99.9	0.0	-113.3
6/6/2011	3201.1	2.9	955.8	31.8	65.4	97.3	1116.3	561.1	354.0	915.1	58.1	307.5	91.7	457.3	1768.4	40.6	915.1	955.8	97.3	0.0	-97.3
6/7/2011	3346.9	8.5	973.2	31.8	67.5	99.4	1143.8	555.1	354.0	909.1	58.1	307.5	91.7	457.3	1917.8	40.6	909.1	973.2	99.4	0.0	-122.8
6/8/2011	3513.2	3.4	973.2	31.8	76.0	107.9	1098.1	560.4	354.0	914.4	58.1	307.5	91.7	457.3	2127.7	40.6	914.4	973.2	107.9	0.0	-126.0
6/9/2011	3385.5	2.1	973.3	31.8	87.2	119.0	1156.1	580.5	354.0	934.5	58.1	307.5	91.7	457.3	1931.9	40.6	934.5	973.3	119.0	0.0	-117.2
6/10/2011	3300.7	8.1	975.7	31.8	81.0	112.8	1271.7	579.4	354.0	933.4	58.1	307.5	91.7	457.3	1734.8	40.6	933.4	975.7	112.8	0.0	-114.5
6/11/2011	3368.3	4.0	976.6	31.8	58.4	90.2	1196.3	566.9	354.0	920.9	58.1	307.5	91.7	457.3	1864.6	40.6	920.9	976.6	90.2	0.0	-105.3
6/12/2011	3364.9	4.1	982.1	31.8	65.9	97.8	1129.0	571.8	354.0	925.8	58.1	307.5	91.7	457.3	1936.7	40.6	925.8	982.1	97.8	0.0	-113.4
6/13/2011	3514.2	2.3	982.1	31.8	70.5	102.3	1191.6	582.2	354.0	936.2	58.1	307.5	91.7	457.3	2015.9	40.6	936.2	982.1	102.3	0.0	-107.6
6/14/2011	3617.5	5.1	984.7	31.8	70.2	102.1	1219.5	593.1	354.0	947.1	58.1	307.5	91.7	457.3	2085.5	40.6	947.1	984.7	102.1	0.0	-99.1
6/15/2011	3611.6	6.9	986.1	31.8	79.6	111.4	1297.9	596.1	354.0	950.1	58.1	307.5	91.7	457.3	2010.7	40.6	950.1	986.1	111.4	0.0	-106.8
6/16/2011	3499.4	6.2	987.6	31.8	78.5	110.3	1257.8	589.0	354.0	943.0	58.1	307.5	91.7	457.3	1945.5	40.6	943.0	987.6	110.3	0.0	-114.4
6/17/2011	3247.9	8.2	992.4	31.8	77.8	109.6	1232.9	578.0	354.0	932.1	58.1	307.5	91.7	457.3	1736.0	40.6	932.1	992.4	109.6	0.0	-129.4
6/18/2011	3128.5	13.5	993.3	31.8	68.3	100.1	1210.6	551.5	354.0	905.5	58.1	307.5	91.7	457.3	1662.2	40.6	905.5	993.3	100.1	0.0	-147.4
6/19/2011	3126.1	3.9	993.3	31.8	60.5	92.3	1053.6	533.8	354.0	887.8	58.1	307.5	91.7	457.3	1816.9	40.6	887.8	993.3	92.3	0.0	-157.2
6/20/2011	3478.0	8.6	993.3	31.8	66.2	98.0	1037.2	542.0	354.0	896.0	58.1	307.5	91.7	457.3	2187.5	40.6	896.0	993.3	98.0	0.0	-154.8
6/21/2011	3656.5	3.6	993.7	31.8	70.3	102.1	1064.7	573.0	354.0	927.0	58.1	307.5	91.7	457.3	2306.9	40.6	927.0	993.7	102.1	0.0	-128.2
6/22/2011	3801.1	3.9	1020.8	31.8	98.1	129.9	1257.1	603.2	354.0	957.3	58.1	307.5	91.7	457.3	2284.1	40.6	957.3	1020.8	129.9	0.0	-152.9
6/23/2011	3815.2	6.8	1021.0	31.8	89.1	120.9	1302.0	610.8	354.0	964.8	58.1	307.5	91.7	457.3	2239.7	40.6	964.8	1021.0	120.9	0.0	-136.4
6/24/2011	3695.3	6.7	1021.0	31.8	89.0	120.8	1292.3	606.1	354.0	960.1	58.1	307.5	91.7	457.3	2134.0	40.6	960.1	1021.0	120.8	0.0	-141.0
6/25/2011	3692.0	5.1	1021.1	31.8	77.6	109.4	1250.6	595.4	354.0	949.4	58.1	307.5	91.7	457.3	2170.3	40.6	949.4	1021.1	109.4	0.0	-140.5
6/26/2011	3688.3	6.0	1021.2	31.8	89.9	121.8	1189.3	600.7	354.0	954.7	58.1	307.5	91.7	457.3	2235.9	40.6	954.7	1021.2	121.8	0.0	-147.6
6/27/2011	3683.9	12.7	1021.2	31.8	96.3	128.1	1301.0	616.1	354.0	970.1	58.1	307.5	91.7	457.3	2117.4	40.6	970.1	1021.2	128.1	0.0	-138.6
6/28/2011	3760.6	12.2	1021.1	31.8	97.9	129.7	1399.1	623.5	354.0	977.6	58.1	307.5	91.7	457.3	2089.6	40.6	977.6	1021.1	129.7	0.0	-132.6
6/29/2011	4055.0	20.1	1012.8	31.8	93.9	125.7	1422.0	627.2	354.0	981.3	58.1	307.5	91.7	457.3	2353.0	40.6	981.3	1012.8	125.7	0.0	-116.6
6/30/2011	4226.5	9.6	1030.0	31.8	95.6	127.4	1387.4	640.6	354.0	994.6	58.1	307.5	91.7	457.3	2554.2	40.6	994.6	1030.0	127.4	0.0	-122.2
7/1/2011	4215.4	11.8	1037.9	31.8	99.0	130.8	1462.7	647.2	354.0	1001.3	58.1	307.5	68.1	433.7	2498.2	40.6	1001.3	1037.9	130.8	0.0	-126.8
7/2/2011	4205.2	16.7	1087.9	31.8	99.1	130.9	1432.4	643.2	354.0	997.2	58.1	307.5	68.1	433.7	2577.3	40.6	997.2	1087.9	130.9	0.0	-181.0
7/3/2011	4196.7	7.7	1087.8	31.8	96.0	127.8	1397.3	637.5	354.0	991.5	58.1	307.5	68.1	433.7	2597.5	40.6	991.5	1087.8	127.8	0.0	-183.5
7/4/2011	3857.8	12.7	1084.8	31.8	113.5	145.3	1376.0	630.6	354.0	984.6	58.1	307.5	68.1	433.7	2306.2	40.6	984.6	1084.8	145.3	0.0	-204.9
7/5/2011	3529.1	20.2	1086.0	31.8	108.3	140.1	1354.9	612.7	354.0	966.7	58.1	307.5	68.1	433.7	2020.0	40.6	966.7	1086.0	140.1	0.0	-218.8
7/6/2011	2690.5	11.0	1078.7	31.8	82.7	114.5	1225.7	584.6	354.0	938.6	58.1	307.5	68.1	433.7	1296.6	40.6	938.6	1078.7	114.5	0.0	-213.9
7/7/2011	2070.1	13.1	1079.8	31.8	89.3	121.1	1191.9	553.5	354.0	907.5	58.1	307.5	68.1	433.7	750.8	40.6					

Table F1-5: Local Basin Scale Water Budget Equation      (Units = Acre-Feet)

Caballo Reservoir to Downstream of American Dam																					
	Surface Water Budget															Groundwater Budget					
	Qus	P	Qp			Qgwrf	Qds			Qgwr				ET	ΔSsw	Qgwus	Qgwr	Qp	Qgwrf	Qgwds	ΔSgw
	River Below Caballo Dam	Precipitation Flows In River Channel	Pumping	MODFLOW Groundwater Return Flow to Rio Grande	MODFLOW 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
8/19/2011	1905.4	16.5	1085.0	31.8	82.5	114.3	1464.5	533.5	354.0	887.6	58.1	307.5	64.1	429.7	339.4	40.6	887.6	1085.0	114.3	0.0	-271.1
8/20/2011	1898.8	22.4	1082.6	31.8	91.8	123.6	1466.9	532.8	354.0	886.8	58.1	307.5	64.1	429.7	344.1	40.6	886.8	1082.6	123.6	0.0	-278.8
8/21/2011	1890.9	16.2	1083.1	31.8	80.0	111.9	1461.7	531.2	354.0	885.2	58.1	307.5	64.1	429.7	325.5	40.6	885.2	1083.1	111.9	0.0	-269.2
8/22/2011	1883.6	19.0	1081.6	31.8	86.2	118.0	1452.5	530.0	354.0	884.0	58.1	307.5	64.1	429.7	335.9	40.6	884.0	1081.6	118.0	0.0	-274.9
8/23/2011	1895.6	27.0	1081.2	31.8	87.6	119.4	1450.5	529.1	354.0	883.1	58.1	307.5	64.1	429.7	359.8	40.6	883.1	1081.2	119.4	0.0	-276.9
8/24/2011	2028.1	18.3	1081.3	31.8	84.6	116.4	1443.8	531.3	354.0	885.3	58.1	307.5	64.1	429.7	485.2	40.6	885.3	1081.3	116.4	0.0	-271.7
8/25/2011	2089.0	15.7	1081.7	31.8	93.5	125.4	1453.2	544.4	354.0	898.4	58.1	307.5	64.1	429.7	530.3	40.6	898.4	1081.7	125.4	0.0	-268.0
8/26/2011	1985.3	12.5	1084.9	31.8	99.0	130.8	1542.6	558.5	354.0	912.5	58.1	307.5	64.1	429.7	328.6	40.6	912.5	1084.9	130.8	0.0	-262.5
8/27/2011	1893.5	15.1	1084.3	31.8	101.0	132.8	1613.1	553.8	354.0	907.8	58.1	307.5	64.1	429.7	175.1	40.6	907.8	1084.3	132.8	0.0	-268.6
8/28/2011	1884.6	8.0	1084.1	31.8	88.0	119.8	1552.3	538.2	354.0	892.2	58.1	307.5	64.1	429.7	222.3	40.6	892.2	1084.1	119.8	0.0	-271.1
8/29/2011	1875.6	10.9	1084.3	31.8	86.0	117.8	1471.6	529.5	354.0	883.6	58.1	307.5	64.1	429.7	303.7	40.6	883.6	1084.3	117.8	0.0	-278.0
8/30/2011	1584.5	16.6	1084.3	31.8	84.9	116.7	1444.4	523.0	354.0	877.0	58.1	307.5	64.1	429.7	50.9	40.6	877.0	1084.3	116.7	0.0	-283.4
8/31/2011	1396.4	14.3	1099.8	31.8	85.8	117.7	1437.7	496.2	354.0	850.2	58.1	307.5	64.1	429.7	-89.4	40.6	850.2	1099.8	117.7	0.0	-326.7
9/1/2011	1727.7	8.9	1103.3	31.8	58.9	90.7	1281.0	461.2	354.0	815.2	58.1	307.5	51.6	417.2	417.2	40.6	815.2	1103.3	90.7	0.0	-338.2
9/2/2011	1922.8	16.9	1099.8	31.8	70.1	101.9	1110.6	468.5	354.0	822.6	58.1	307.5	51.6	417.2	791.1	40.6	822.6	1099.8	101.9	0.0	-338.5
9/3/2011	1933.2	10.6	1096.6	31.8	97.2	129.1	1186.8	513.8	354.0	867.8	58.1	307.5	51.6	417.2	697.6	40.6	867.8	1096.6	129.1	0.0	-317.2
9/4/2011	1938.4	14.7	1096.6	31.8	102.6	134.5	1440.5	535.3	354.0	889.3	58.1	307.5	51.6	417.2	437.2	40.6	889.3	1096.6	134.5	0.0	-301.2
9/5/2011	1954.5	20.1	1096.6	31.8	99.4	131.2	1495.3	537.8	354.0	891.9	58.1	307.5	51.6	417.2	398.1	40.6	891.9	1096.6	131.2	0.0	-295.3
9/6/2011	1970.1	16.9	1096.6	31.8	121.4	153.3	1507.5	540.8	354.0	894.9	58.1	307.5	51.6	417.2	417.3	40.6	894.9	1096.6	153.3	0.0	-314.4
9/7/2011	1983.7	18.1	1093.1	31.8	98.7	130.5	1521.8	542.9	354.0	896.9	58.1	307.5	51.6	417.2	389.6	40.6	896.9	1093.1	130.5	0.0	-286.1
9/8/2011	1993.1	8.6	1075.6	31.8	95.5	127.3	1521.3	544.9	354.0	898.9	58.1	307.5	51.6	417.2	367.1	40.6	898.9	1075.6	127.3	0.0	-263.4
9/9/2011	1969.0	8.5	1075.0	31.8	97.6	129.5	1531.8	546.4	354.0	900.4	58.1	307.5	51.6	417.2	332.5	40.6	900.4	1075.0	129.5	0.0	-263.4
9/10/2011	804.4	12.8	1085.0	31.8	101.5	133.3	1543.0	527.4	354.0	881.5	58.1	307.5	51.6	417.2	-806.1	40.6	881.5	1085.0	133.3	0.0	-296.2
9/11/2011	0.0	14.8	1087.0	31.8	99.7	131.5	1529.0	430.7	354.0	784.7	58.1	307.5	51.6	417.2	-1497.6	40.6	784.7	1087.0	131.5	0.0	-393.2
9/12/2011	0.0	23.5	1087.2	31.8	39.1	70.9	1087.8	300.5	354.0	654.5	58.1	307.5	51.6	417.2	-978.0	40.6	654.5	1087.2	70.9	0.0	-462.9
9/13/2011	0.0	15.8	1086.0	31.8	19.8	51.6	375.8	147.0	354.0	501.1	58.1	307.5	51.6	417.2	-140.7	40.6	501.1	1086.0	51.6	0.0	-595.9
9/14/2011	0.0	14.6	1085.8	31.8	0.0	31.8	160.7	113.4	354.0	467.5	58.1	307.5	51.6	417.2	86.8	40.6	467.5	1085.8	31.8	0.0	-609.5
9/15/2011	0.0	12.8	1085.8	31.8	18.2	50.0	65.5	26.2	354.0	380.2	58.1	307.5	51.6	417.2	285.7	40.6	380.2	1085.8	50.0	0.0	-714.9
9/16/2011	0.0	10.8	1083.9	31.8	20.1	51.9	37.2	23.6	354.0	377.6	58.1	307.5	51.6	417.2	314.6	40.6	377.6	1083.9	51.9	0.0	-717.6
9/17/2011	0.0	7.6	1084.7	31.8	17.3	49.1	34.8	23.4	354.0	377.4	58.1	307.5	51.6	417.2	312.0	40.6	377.4	1084.7	49.1	0.0	-715.8
9/18/2011	0.0	10.1	1084.7	31.8	17.2	49.1	33.7	23.3	354.0	377.3	58.1	307.5	51.6	417.2	315.6	40.6	377.3	1084.7	49.1	0.0	-715.8
9/19/2011	0.0	14.1	1084.8	31.8	21.1	52.9	33.9	24.1	354.0	378.1	58.1	307.5	51.6	417.2	322.5	40.6	378.1	1084.8	52.9	0.0	-718.9
9/20/2011	0.0	10.5	1084.8	31.8	24.5	56.4	34.2	28.3	354.0	382.3	58.1	307.5	51.6	417.2	317.9	40.6	382.3	1084.8	56.4	0.0	-718.3
9/21/2011	0.0	8.1	1084.5	31.8	22.4	54.2	35.3	32.9	354.0	386.9	58.1	307.5	51.6	417.2	307.5	40.6	386.9	1084.58			



Table F1-5: Local Basin Scale Water Budget Equation      (Units = Acre-Feet)

Caballo Reservoir to Downstream of American Dam																					
	Surface Water Budget															Groundwater Budget					
	Qus	P	Qp			Qgwrf	Qds			Qgwr				ET	ΔSsw	Qgwus	Qgwr	Qp	Qgwrf	Qgwds	ΔSgw
				MODFLOW Groundwater Return Flow to Rio Grande	MODFLOW 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	Groundwater Return Flow = Groundwater RF + Irrigation RRF	Downstream Groundwater Outflow	Change in Vadose Zone and Groundwater Storage	
Date	River Below Caballo Dam	Precipitation Flows In River Channel	Pumping																		
11/2/2011	0.0	4.0	395.1	59.1	18.4	77.5	34.6	23.1	3.7	26.8	18.4	131.8	0.0	150.2	265.1	87.8	26.8	395.1	77.5	0.0	-357.9
11/3/2011	0.0	7.2	392.9	59.1	18.5	77.6	34.7	23.2	3.7	26.9	18.4	131.8	0.0	150.2	266.0	87.8	26.9	392.9	77.6	0.0	-355.8
11/4/2011	0.0	3.6	390.9	59.1	19.5	78.6	35.5	23.4	3.7	27.2	18.4	131.8	0.0	150.2	260.3	87.8	27.2	390.9	78.6	0.0	-354.5
11/5/2011	0.0	4.7	390.6	59.1	20.5	79.6	36.4	23.6	3.7	27.3	18.4	131.8	0.0	150.2	261.0	87.8	27.3	390.6	79.6	0.0	-355.0
11/6/2011	0.0	1.8	390.4	59.1	19.6	78.7	36.2	23.9	3.7	27.6	18.4	131.8	0.0	150.2	257.0	87.8	27.6	390.4	78.7	0.0	-353.7
11/7/2011	0.0	4.4	389.1	59.1	19.7	78.8	36.2	24.0	3.7	27.7	18.4	131.8	0.0	150.2	258.3	87.8	27.7	389.1	78.8	0.0	-352.3
11/8/2011	0.0	5.2	389.0	59.1	19.8	78.9	36.2	24.1	3.7	27.9	18.4	131.8	0.0	150.2	258.9	87.8	27.9	389.0	78.9	0.0	-352.2
11/9/2011	0.0	2.0	388.9	59.1	20.0	79.1	36.5	24.3	3.7	28.0	18.4	131.8	0.0	150.2	255.4	87.8	28.0	388.9	79.1	0.0	-352.2
11/10/2011	0.0	1.6	374.7	59.1	19.7	78.8	36.4	24.5	3.7	28.3	18.4	131.8	0.0	150.2	240.3	87.8	28.3	374.7	78.8	0.0	-337.4
11/11/2011	0.0	3.8	373.5	59.1	20.0	79.1	36.6	24.7	3.7	28.4	18.4	131.8	0.0	150.2	241.3	87.8	28.4	373.5	79.1	0.0	-336.4
11/12/2011	0.0	5.9	373.5	59.1	20.1	79.2	37.0	24.9	3.7	28.7	18.4	131.8	0.0	150.2	242.8	87.8	28.7	373.5	79.2	0.0	-336.2
11/13/2011	0.0	4.9	373.5	59.1	20.1	79.3	37.0	25.2	3.7	28.9	18.4	131.8	0.0	150.2	241.6	87.8	28.9	373.5	79.3	0.0	-336.1
11/14/2011	0.0	12.3	373.5	59.1	20.1	79.2	37.2	25.3	3.7	29.1	18.4	131.8	0.0	150.2	248.5	87.8	29.1	373.5	79.2	0.0	-335.8
11/15/2011	0.0	4.4	373.5	59.1	20.1	79.3	37.3	25.4	3.7	29.1	18.4	131.8	0.0	150.2	240.6	87.8	29.1	373.5	79.3	0.0	-335.8
11/16/2011	0.0	5.3	381.7	59.1	20.1	79.2	37.3	25.6	3.7	29.3	18.4	131.8	0.0	150.2	249.4	87.8	29.3	381.7	79.2	0.0	-343.8
11/17/2011	0.0	2.2	381.7	59.1	20.1	79.3	37.3	25.6	3.7	29.3	18.4	131.8	0.0	150.2	246.3	87.8	29.3	381.7	79.3	0.0	-343.8
11/18/2011	0.0	2.0	383.6	59.1	20.3	79.5	37.5	25.4	3.7	29.2	18.4	131.8	0.0	150.2	248.2	87.8	29.2	383.6	79.5	0.0	-346.1
11/19/2011	0.0	2.1	383.6	59.1	20.1	79.3	37.4	25.3	3.7	29.1	18.4	131.8	0.0	150.2	248.3	87.8	29.1	383.6	79.3	0.0	-346.0
11/20/2011	0.0	0.7	383.6	59.1	20.3	79.4	37.4	25.4	3.7	29.1	18.4	131.8	0.0	150.2	247.1	87.8	29.1	383.6	79.4	0.0	-346.1
11/21/2011	0.0	0.9	383.6	59.1	20.6	79.7	37.7	25.5	3.7	29.2	18.4	131.8	0.0	150.2	247.2	87.8	29.2	383.6	79.7	0.0	-346.3
11/22/2011	0.0	2.3	383.4	59.1	20.7	79.8	37.8	25.6	3.7	29.3	18.4	131.8	0.0	150.2	248.3	87.8	29.3	383.4	79.8	0.0	-346.1
11/23/2011	0.0	1.9	383.4	59.1	21.2	80.3	38.2	25.6	3.7	29.4	18.4	131.8	0.0	150.2	247.9	87.8	29.4	383.4	80.3	0.0	-346.5
11/24/2011	0.0	5.7	383.4	59.1	21.0	80.1	38.3	25.7	3.7	29.4	18.4	131.8	0.0	150.2	251.3	87.8	29.4	383.4	80.1	0.0	-346.3
11/25/2011	0.0	3.0	383.4	59.1	20.9	80.0	38.3	25.5	3.7	29.2	18.4	131.8	0.0	150.2	248.8	87.8	29.2	383.4	80.0	0.0	-346.4
11/26/2011	0.0	3.7	383.4	59.1	20.6	79.7	37.8	25.7	3.7	29.4	18.4	131.8	0.0	150.2	249.4	87.8	29.4	383.4	79.7	0.0	-345.8
11/27/2011	0.0	5.7	383.6	59.1	20.3	79.4	37.6	25.7	3.7	29.5	18.4	131.8	0.0	150.2	251.5	87.8	29.5	383.6	79.4	0.0	-345.7
11/28/2011	0.0	5.3	383.6	59.1	19.8	79.0	37.2	25.8	3.7	29.6	18.4	131.8	0.0	150.2	250.9	87.8	29.6	383.6	79.0	0.0	-345.1
11/29/2011	0.0	4.5	386.2	59.1	19.7	78.8	37.0	25.8	3.7	29.6	18.4	131.8	0.0	150.2	252.8	87.8	29.6	386.2	78.8	0.0	-347.6
11/30/2011	0.0	2.8	382.1	59.1	19.7	78.9	36.9	25.9	3.7	29.6	18.4	131.8	0.0	150.2	247.1	87.8	29.6	382.1	78.9	0.0	-343.5
12/1/2011	0.0	5.6	381.6	59.1	19.8	78.9	37.0	25.7	3.7	29.5	18.4	131.8	0.0	150.2	249.4	87.8	29.5	381.6	78.9	0.0	-343.2
12/2/2011	0.0	3.6	373.8	59.1	20.3	79.4	37.3	25.8	3.7	29.5	18.4	131.8	0.0	150.2	239.9	87.8	29.5	373.8	79.4	0.0	-335.9
12/3/2011	0.0	5.5	371.1	59.1	20.5	79.6	37.6	25.8	3.7	29.5	18.4	131.8	0.0	150.2	238.9	87.8	29.5	371.1	79.6	0.0	-333.4
12/4/2011	0.0	4.7	371.1	59.1	20.6	79.8	37.8	25.7	3.7	29.5	18.4	131.8	0.0	150.2	238.2	87.8	29.5	371.1	79.8	0.0	-333.6
12/5/2011	0.0	7.0	371.1	59.1	20.5	79.7	37.8	25.8	3.7	29.6	18.4	131.8	0.0	150.2	240.2	87.8	29.6	371.1	79.7	0.0	-333.4
12/6/2011	0.0	3.8	369.2	59.1	0.0	59.1	24.8	25.2	3.7	29.0	18.4	131.8	0.0	150.2	228.2	87.8	29.0	369.2	59.1	0.0	-311.5

Table F1-5: Local Basin Scale Water Budget Equation      (Units = Acre-Feet)

Caballo Reservoir to Downstream of American Dam																					
	Surface Water Budget															Groundwater Budget					
	Qus	P	Qp			Qgwrf	Qds			Qgwr				ET	ΔSsw	Qgwus	Qgwr	Qp	Qgwrf	Qgwds	ΔSgw
	River Below Caballo Dam	Precipitation Flows In River Channel	Pumping	MODFLOW Groundwater Return Flow to Rio Grande	MODFLOW 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
1/16/2012	0.0	1.1	411.2	59.1	19.3	78.4	36.8	26.0	3.7	29.7	18.4	131.8	0.0	150.2	273.9	87.8	29.7	411.2	78.4	0.0	-372.0
1/17/2012	0.0	4.4	420.7	59.1	19.2	78.3	36.7	25.5	3.7	29.2	18.4	131.8	0.0	150.2	287.2	87.8	29.2	420.7	78.3	0.0	-381.9
1/18/2012	0.0	6.9	423.1	59.1	19.6	78.7	36.5	25.5	3.7	29.3	18.4	131.8	0.0	150.2	292.8	87.8	29.3	423.1	78.7	0.0	-384.7
1/19/2012	0.0	3.7	423.2	59.1	19.8	78.9	36.8	25.4	3.7	29.2	18.4	131.8	0.0	150.2	289.7	87.8	29.2	423.2	78.9	0.0	-385.1
1/20/2012	0.0	4.2	430.3	59.1	19.7	78.8	36.7	25.3	3.7	29.0	18.4	131.8	0.0	150.2	297.3	87.8	29.0	430.3	78.8	0.0	-392.2
1/21/2012	0.0	4.5	428.9	59.1	20.1	79.2	37.0	25.4	3.7	29.1	18.4	131.8	0.0	150.2	296.3	87.8	29.1	428.9	79.2	0.0	-391.1
1/22/2012	0.0	3.7	428.9	59.1	20.0	79.1	37.0	25.3	3.7	29.0	18.4	131.8	0.0	150.2	295.5	87.8	29.0	428.9	79.1	0.0	-391.2
1/23/2012	0.0	1.3	428.9	59.1	19.9	79.1	36.9	25.2	3.7	29.0	18.4	131.8	0.0	150.2	293.3	87.8	29.0	428.9	79.1	0.0	-391.1
1/24/2012	0.0	3.7	428.8	59.1	20.3	79.4	37.1	25.4	3.7	29.1	18.4	131.8	0.0	150.2	295.6	87.8	29.1	428.8	79.4	0.0	-391.3
1/25/2012	0.0	4.8	430.1	59.1	19.8	78.9	37.0	25.1	3.7	28.9	18.4	131.8	0.0	150.2	297.8	87.8	28.9	430.1	78.9	0.0	-392.3
1/26/2012	0.0	3.1	430.2	59.1	20.1	79.3	37.0	25.2	3.7	28.9	18.4	131.8	0.0	150.2	296.4	87.8	28.9	430.2	79.3	0.0	-392.6
1/27/2012	0.0	3.5	430.4	59.1	20.2	79.3	37.1	25.3	3.7	29.0	18.4	131.8	0.0	150.2	296.9	87.8	29.0	430.4	79.3	0.0	-392.9
1/28/2012	0.0	4.2	427.6	59.1	19.8	78.9	36.8	25.2	3.7	28.9	18.4	131.8	0.0	150.2	294.9	87.8	28.9	427.6	78.9	0.0	-389.8
1/29/2012	0.0	2.7	428.7	59.1	19.7	78.8	36.7	25.2	3.7	28.9	18.4	131.8	0.0	150.2	294.6	87.8	28.9	428.7	78.8	0.0	-390.8
1/30/2012	0.0	3.6	428.7	59.1	19.6	78.8	36.5	25.1	3.7	28.8	18.4	131.8	0.0	150.2	295.5	87.8	28.8	428.7	78.8	0.0	-390.8
1/31/2012	0.0	5.7	428.8	59.1	20.1	79.2	36.8	25.3	3.7	29.0	18.4	131.8	0.0	150.2	297.7	87.8	29.0	428.8	79.2	0.0	-391.2
2/1/2012	0.0	2.6	442.6	59.1	19.2	78.3	36.4	25.2	3.7	28.9	18.4	131.8	0.0	150.2	308.1	87.8	28.9	442.6	78.3	0.0	-404.2
2/2/2012	0.0	3.3	452.3	59.1	19.2	78.3	36.1	25.1	3.7	28.8	18.4	131.8	0.0	150.2	318.8	87.8	28.8	452.3	78.3	0.0	-413.9
2/3/2012	0.0	4.0	471.0	59.1	19.4	78.5	36.2	25.1	3.7	28.8	18.4	131.8	0.0	150.2	338.4	87.8	28.8	471.0	78.5	0.0	-432.9
2/4/2012	0.0	4.7	471.9	59.1	19.4	78.6	36.3	25.2	3.7	28.9	18.4	131.8	0.0	150.2	339.7	87.8	28.9	471.9	78.6	0.0	-433.7
2/5/2012	0.0	6.0	453.9	59.1	19.7	78.8	36.4	25.0	3.7	28.7	18.4	131.8	0.0	150.2	323.4	87.8	28.7	453.9	78.8	0.0	-416.2
2/6/2012	0.0	2.7	455.5	59.1	19.6	78.7	36.4	24.9	3.7	28.6	18.4	131.8	0.0	150.2	321.7	87.8	28.6	455.5	78.7	0.0	-417.7
2/7/2012	0.0	2.8	462.3	59.1	19.2	78.3	36.1	24.7	3.7	28.4	18.4	131.8	0.0	150.2	328.7	87.8	28.4	462.3	78.3	0.0	-424.4
2/8/2012	0.0	4.6	462.2	59.1	19.2	78.3	36.1	24.8	3.7	28.6	18.4	131.8	0.0	150.2	330.3	87.8	28.6	462.2	78.3	0.0	-424.1
2/9/2012	0.0	5.0	462.2	59.1	19.3	78.4	36.0	24.7	3.7	28.5	18.4	131.8	0.0	150.2	331.1	87.8	28.5	462.2	78.4	0.0	-424.4
2/10/2012	0.0	3.2	475.0	59.1	19.3	78.4	36.0	24.7	3.7	28.4	18.4	131.8	0.0	150.2	342.1	87.8	28.4	475.0	78.4	0.0	-437.2
2/11/2012	0.0	3.1	474.9	59.1	19.3	78.4	36.1	24.7	3.7	28.4	18.4	131.8	0.0	150.2	341.7	87.8	28.4	474.9	78.4	0.0	-437.1
2/12/2012	0.0	8.4	474.9	59.1	19.4	78.5	36.1	24.7	3.7	28.4	18.4	131.8	0.0	150.2	347.0	87.8	28.4	474.9	78.5	0.0	-437.1
2/13/2012	0.0	3.6	474.5	59.1	19.3	78.4	36.0	24.7	3.7	28.4	18.4	131.8	0.0	150.2	341.8	87.8	28.4	474.5	78.4	0.0	-436.6
2/14/2012	0.0	5.3	474.2	59.1	19.5	78.6	36.1	24.6	3.7	28.3	18.4	131.8	0.0	150.2	343.5	87.8	28.3	474.2	78.6	0.0	-436.6
2/15/2012	0.0	2.7	474.9	59.1	19.5	78.6	36.1	24.6	3.7	28.3	18.4	131.8	0.0	150.2	341.5	87.8	28.3	474.9	78.6	0.0	-437.3
2/16/2012	0.0	3.4	475.0	59.1	19.4	78.6	36.2	24.6	3.7	28.3	18.4	131.8	0.0	150.2	342.3	87.8	28.3	475.0	78.6	0.0	-437.4
2/17/2012	0.0	5.4	475.1	59.1	19.7	78.8	36.2	24.5	3.7	28.3	18.4	131.8	0.0	150.2	344.6	87.8	28.3	475.1	78.8	0.0	-437.8
2/18/2012	0.0	1.9	475.1	59.1	19.4	78.5	36.1	24.5	3.7	28.3	18.4	131.8	0.0	150.2	341.0	87.8	28.3	475.1	78.5	0.0	-437.5
2/19/2012	0.0	2.2	475.1	59.1	19.1	78.3	35.7	24.2	3.7	27.9	18.4	131.8	0.0	150.2	341.8	87.8	27.9	475.1	78.3	0.0	-437.6
2/20/2012	0.0	4.1	475.1	59.1	19.2	78.3	35.7	24.3	3.7	28.0	18.4	131.8	0.0	150.2	343.6	87.8	28.0	475.1	78.3	0.0	-437.6
2/21/2012																					

Table F1-5: Local Basin Scale Water Budget Equation      (Units = Acre-Feet)

Caballo Reservoir to Downstream of American Dam																					
	Surface Water Budget															Groundwater Budget					
	Qus	P	Qp			Qgwrf	Qds			Qgwr				ET	ΔSsw	Qgwus	Qgwr	Qp	Qgwrf	Qgwds	ΔSgw
	River Below Caballo Dam	Precipitation Flows In River Channel	Pumping	MODFLOW Groundwater Return Flow to Rio Grande	MODFLOW 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	34.5	23.1	354.0	377.1	58.1	307.5	25.8	391.4	-234.5	40.6	377.1	517.8	50.3	0.0	-150.4
4/1/2012	868.8	0.5	598.8	31.8	18.7	50.6	354.0	191.7	354.0	545.7	58.1	307.5	56.8	422.4	196.5	40.6	545.7	598.8	50.6	0.0	-63.1
4/2/2012	2320.7	2.2	704.1	31.8	19.5	51.3	354.5	232.6	354.0	586.6	58.1	307.5	56.8	422.4	1714.7	40.6	586.6	704.1	51.3	0.0	-128.2
4/3/2012	2320.7	1.7	747.3	31.8	19.5	51.3	354.8	376.1	354.0	730.1	58.1	307.5	56.8	422.4	1613.6	40.6	730.1	747.3	51.3	0.0	-27.8
4/4/2012	2538.8	2.4	742.3	31.8	19.8	51.7	355.1	568.2	354.0	922.2	58.1	307.5	56.8	422.4	1635.5	40.6	922.2	742.3	51.7	0.0	168.8
4/5/2012	2895.9	3.9	750.9	31.8	23.9	55.8	1746.0	627.1	354.0	981.1	58.1	307.5	56.8	422.4	556.9	40.6	981.1	750.9	55.8	0.0	215.1
4/6/2012	2856.2	3.3	785.4	31.8	81.5	113.3	1939.6	673.6	354.0	1027.6	58.1	307.5	56.8	422.4	368.6	40.6	1027.6	785.4	113.3	0.0	169.5
4/7/2012	2757.0	2.0	781.9	31.8	105.6	137.4	2265.2	690.9	354.0	1044.9	58.1	307.5	56.8	422.4	-54.2	40.6	1044.9	781.9	137.4	0.0	166.3
4/8/2012	2757.0	0.7	786.4	31.8	110.8	142.6	2272.6	681.2	354.0	1035.2	58.1	307.5	56.8	422.4	-43.5	40.6	1035.2	786.4	142.6	0.0	146.8
4/9/2012	2737.2	0.1	795.0	31.8	120.3	152.1	2202.8	676.0	354.0	1030.0	58.1	307.5	56.8	422.4	29.1	40.6	1030.0	795.0	152.1	0.0	123.5
4/10/2012	2717.4	0.6	845.0	31.8	128.0	159.8	2202.7	674.5	354.0	1028.5	58.1	307.5	56.8	422.4	69.1	40.6	1028.5	845.0	159.8	0.0	64.4
4/11/2012	2717.4	3.9	856.3	31.8	127.1	159.0	2192.3	671.8	354.0	1025.8	58.1	307.5	56.8	422.4	96.1	40.6	1025.8	856.3	159.0	0.0	51.1
4/12/2012	2717.4	3.8	832.7	31.8	124.4	156.2	2131.4	658.8	354.0	1012.8	58.1	307.5	56.8	422.4	143.5	40.6	1012.8	832.7	156.2	0.0	64.6
4/13/2012	2320.7	0.7	823.4	31.8	114.1	146.0	1963.4	642.2	354.0	996.2	58.1	307.5	56.8	422.4	-91.4	40.6	996.2	823.4	146.0	0.0	67.5
4/14/2012	1904.1	1.2	824.1	31.8	116.0	147.9	1924.3	602.4	354.0	956.4	58.1	307.5	56.8	422.4	-425.8	40.6	956.4	824.1	147.9	0.0	25.1
4/15/2012	1884.3	3.5	824.2	31.8	66.8	98.6	1650.9	541.0	354.0	895.0	58.1	307.5	56.8	422.4	-157.8	40.6	895.0	824.2	98.6	0.0	12.8
4/16/2012	1884.3	1.0	823.8	31.8	58.5	90.3	1326.1	507.3	354.0	861.3	58.1	307.5	56.8	422.4	189.6	40.6	861.3	823.8	90.3	0.0	-12.2
4/17/2012	1884.3	3.1	829.2	31.8	67.0	98.8	1246.1	505.6	354.0	859.6	58.1	307.5	56.8	422.4	287.4	40.6	859.6	829.2	98.8	0.0	-27.9
4/18/2012	1884.3	0.7	830.6	31.8	67.5	99.3	1250.5	503.3	354.0	857.4	58.1	307.5	56.8	422.4	284.7	40.6	857.4	830.6	99.3	0.0	-31.9
4/19/2012	1810.9	0.8	837.4	31.8	65.5	97.4	1211.1	498.6	354.0	852.7	58.1	307.5	56.8	422.4	260.3	40.6	852.7	837.4	97.4	0.0	-41.5
4/20/2012	1640.3	1.2	838.3	31.8	65.3	97.1	1195.6	490.4	354.0	844.4	58.1	307.5	56.8	422.4	114.6	40.6	844.4	838.3	97.1	0.0	-50.4
4/21/2012	1578.8	0.8	854.9	31.8	59.0	90.8	1172.4	470.5	354.0	824.5	58.1	307.5	56.8	422.4	106.2	40.6	824.5	854.9	90.8	0.0	-80.7
4/22/2012	1578.8	2.5	854.9	31.8	50.7	82.5	1071.4	449.5	354.0	803.5	58.1	307.5	56.8	422.4	221.5	40.6	803.5	854.9	82.5	0.0	-93.3
4/23/2012	1586.8	4.9	854.9	31.8	48.6	80.4	982.3	441.1	354.0	795.1	58.1	307.5	56.8	422.4	327.3	40.6	795.1	854.9	80.4	0.0	-99.7
4/24/2012	1604.6	3.4	855.1	31.8	50.9	82.7	954.1	440.7	354.0	794.7	58.1	307.5	56.8	422.4	374.5	40.6	794.7	855.1	82.7	0.0	-102.5
4/25/2012	1729.6	0.9	858.1	31.8	44.8	76.7	954.0	441.8	354.0	795.8	58.1	307.5	56.8	422.4	493.1	40.6	795.8	858.1	76.7	0.0	-98.3
4/26/2012	1828.8	2.7	856.6	31.8	43.7	75.6	923.1	450.1	354.0	804.1	58.1	307.5	56.8	422.4	614.0	40.6	804.1	856.6	75.6	0.0	-87.4
4/27/2012	2009.3	2.7	848.4	31.8	56.0	87.8	952.0	470.4	354.0	824.4	58.1	307.5	56.8	422.4	749.3	40.6	824.4	848.4	87.8	0.0	-71.2
4/28/2012	1826.8	1.3	848.2	31.8	60.8	92.6	1060.9	483.8	354.0	837.8	58.1	307.5	56.8	422.4	447.7	40.6	837.8	848.2	92.6	0.0	-62.4
4/29/2012	1602.6	1.6	848.4	31.8	48.9	80.7	1141.3	472.8	354.0	826.8	58.1	307.5	56.8	422.4	142.9	40.6	826.8	848.4	80.7	0.0	-61.7
4/30/2012	1600.7	2.3	848.6	31.8	53.1	84.9	1125.4	438.6	354.0	792.6	58.1	307.5	56.8	422.4	196.0	40.6	792.6	848.6	84.9	0.0	-100.3
5/1/2012	1612.6	1.2	855.0	31.8	48.7	80.5	968.0	424.9	354.0	778.9	58.1	307.5	89.2	454.8	347.5	40.6	778.9	855.0	80.5	0.0	-115.9
5/2/2012	1646.3	4.6	855.5	31.8	46.5	78.4	1014.6	431.2	354.0	785.2	58.1	307.5	89.2	454.8	330.2	40.6	785.2	855.5	78.4	0.0	-108.0
5/3/2012	1660.2	4.9	854.6	31.8	46.4	78.2	1020.5	429.7	354.0	783.7	58.1	307.5	89.2	454.8	338.9	40.6	783.7	854.6	78.2	0.0	-108.4
5/4/2012	912.4	2.3	865.5	31.8	46.34																



Table F1-5: Local Basin Scale Water Budget Equation      (Units = Acre-Feet)

Caballo Reservoir to Downstream of American Dam																					
	Surface Water Budget															Groundwater Budget					
	Qus	P	Qp			Qgwrf	Qds			Qgwr				ET	ΔSsw	Qgwus	Qgwr	Qp	Qgwrf	Qgwds	ΔSgw
	River Below Caballo Dam	Precipitation Flows In River Channel	Pumping	MODFLOW Groundwater Return Flow to Rio Grande	MODFLOW 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
6/14/2012	3391.7	5.1	911.5	31.8	91.7	123.5	1545.2	624.6	354.0	978.6	58.1	307.5	91.7	457.3	1450.7	40.6	978.6	911.5	123.5	0.0	-15.8
6/15/2012	3369.9	6.9	891.8	31.8	65.9	97.7	1386.8	579.6	354.0	933.7	58.1	307.5	91.7	457.3	1588.5	40.6	933.7	891.8	97.7	0.0	-15.2
6/16/2012	3459.2	6.2	892.5	31.8	52.5	84.3	1111.6	539.2	354.0	893.2	58.1	307.5	91.7	457.3	1980.1	40.6	893.2	892.5	84.3	0.0	-43.0
6/17/2012	3465.1	8.2	892.5	31.8	61.0	92.8	902.0	532.3	354.0	886.4	58.1	307.5	91.7	457.3	2213.0	40.6	886.4	892.5	92.8	0.0	-58.3
6/18/2012	3292.6	13.5	892.6	31.8	53.3	85.2	909.1	552.3	354.0	906.4	58.1	307.5	91.7	457.3	2011.0	40.6	906.4	892.6	85.2	0.0	-30.7
6/19/2012	3272.7	3.9	892.7	31.8	49.9	81.8	1087.7	563.4	354.0	917.4	58.1	307.5	91.7	457.3	1788.6	40.6	917.4	892.7	81.8	0.0	-16.4
6/20/2012	3312.4	8.6	889.7	31.8	47.2	79.0	1110.3	561.3	354.0	915.3	58.1	307.5	91.7	457.3	1806.8	40.6	915.3	889.7	79.0	0.0	-12.8
6/21/2012	3362.0	3.6	888.6	31.8	51.0	82.9	1094.4	570.9	354.0	924.9	58.1	307.5	91.7	457.3	1860.4	40.6	924.9	888.6	82.9	0.0	-6.0
6/22/2012	3371.9	3.9	888.6	31.8	46.7	78.5	1170.0	577.9	354.0	931.9	58.1	307.5	91.7	457.3	1783.8	40.6	931.9	888.6	78.5	0.0	5.4
6/23/2012	3350.1	6.8	888.5	31.8	49.4	81.2	1169.2	567.1	354.0	921.1	58.1	307.5	91.7	457.3	1779.0	40.6	921.1	888.5	81.2	0.0	-8.0
6/24/2012	3354.0	6.7	888.5	31.8	45.1	77.0	1075.2	546.5	354.0	900.5	58.1	307.5	91.7	457.3	1893.3	40.6	900.5	888.5	77.0	0.0	-24.3
6/25/2012	3437.4	5.1	888.5	31.8	46.1	77.9	956.6	529.0	354.0	883.0	58.1	307.5	91.7	457.3	2112.0	40.6	883.0	888.5	77.9	0.0	-42.8
6/26/2012	3504.8	6.0	887.9	31.8	43.9	75.8	882.0	531.7	354.0	885.7	58.1	307.5	91.7	457.3	2249.4	40.6	885.7	887.9	75.8	0.0	-37.3
6/27/2012	3340.2	12.7	879.9	31.8	48.4	80.2	911.2	544.2	354.0	898.2	58.1	307.5	91.7	457.3	2046.3	40.6	898.2	879.9	80.2	0.0	-21.4
6/28/2012	3159.7	12.2	880.2	31.8	47.6	79.4	964.0	536.7	354.0	890.7	58.1	307.5	91.7	457.3	1819.4	40.6	890.7	880.2	79.4	0.0	-28.2
6/29/2012	3221.2	20.1	877.0	31.8	32.6	64.4	930.9	510.0	354.0	864.0	58.1	307.5	91.7	457.3	1930.5	40.6	864.0	877.0	64.4	0.0	-36.8
6/30/2012	3276.7	9.6	874.4	31.8	25.1	56.9	781.7	495.0	354.0	849.0	58.1	307.5	91.7	457.3	2129.6	40.6	849.0	874.4	56.9	0.0	-41.6
7/1/2012	3290.6	11.8	849.4	31.8	34.0	65.9	723.0	503.9	354.0	857.9	58.1	307.5	68.1	433.7	2203.0	40.6	857.9	849.4	65.9	0.0	-16.8
7/2/2012	3296.5	16.7	800.0	31.8	36.2	68.0	805.5	518.1	354.0	872.2	58.1	307.5	68.1	433.7	2069.9	40.6	872.2	800.0	68.0	0.0	44.8
7/3/2012	3106.1	7.7	782.5	31.8	40.9	72.7	886.1	525.5	354.0	879.5	58.1	307.5	68.1	433.7	1769.7	40.6	879.5	782.5	72.7	0.0	64.9
7/4/2012	2989.1	12.7	780.3	31.8	49.0	80.8	941.6	521.3	354.0	875.3	58.1	307.5	68.1	433.7	1612.3	40.6	875.3	780.3	80.8	0.0	54.8
7/5/2012	2802.6	20.2	779.0	31.8	53.0	84.9	954.4	511.5	354.0	865.5	58.1	307.5	68.1	433.7	1433.1	40.6	865.5	779.0	84.9	0.0	42.3
7/6/2012	2651.9	11.0	781.5	31.8	61.3	93.1	963.5	500.8	354.0	854.8	58.1	307.5	68.1	433.7	1285.5	40.6	854.8	781.5	93.1	0.0	20.8
7/7/2012	2441.7	13.1	766.3	31.8	56.0	87.8	944.2	485.4	354.0	839.4	58.1	307.5	68.1	433.7	1091.5	40.6	839.4	766.3	87.8	0.0	25.9
7/8/2012	2217.5	13.6	766.1	31.8	94.2	126.0	926.6	463.8	354.0	817.8	58.1	307.5	68.1	433.7	945.1	40.6	817.8	766.1	126.0	0.0	-33.7
7/9/2012	2231.4	18.6	764.3	31.8	81.6	113.4	887.1	439.4	354.0	793.4	58.1	307.5	68.1	433.7	1013.4	40.6	793.4	764.3	113.4	0.0	-43.6
7/10/2012	1933.9	14.9	766.2	31.8	66.1	97.9	818.6	426.0	354.0	780.0	58.1	307.5	68.1	433.7	780.6	40.6	780.0	766.2	97.9	0.0	-43.6
7/11/2012	1691.9	12.0	758.4	31.8	55.0	86.8	743.2	417.1	354.0	771.2	58.1	307.5	68.1	433.7	600.9	40.6	771.2	758.4	86.8	0.0	-33.4
7/12/2012	1763.3	10.6	757.9	31.8	40.6	72.5	749.6	396.8	354.0	750.8	58.1	307.5	68.1	433.7	670.2	40.6	750.8	757.9	72.5	0.0	-38.9
7/13/2012	1892.2	12.9	758.0	31.8	35.4	67.2	680.1	377.3	354.0	731.4	58.1	307.5	68.1	433.7	885.3	40.6	731.4	758.0	67.2	0.0	-53.3
7/14/2012	2001.3	10.4	750.6	31.8	34.9	66.7	554.8	380.4	354.0	734.4	58.1	307.5	68.1	433.7	1106.1	40.6	734.4	750.6	66.7	0.0	-42.3
7/15/2012	2086.6	22.7	750.6	31.8	31.9	63.7	571.1	395.4	354.0	749.4	58.1	307.5	68.1	433.7	1169.3	40.6	749.4	750.6	63.7	0.0	-24.2
7/16/2012	2804.6	8.5	746.8	31.8	35.0	66.8	579.8	413.4	354.0	767.4	58.1	307.5	68.1	433.7	1845.8	40.6	767.4	746.8	66.8	0.0	-5.5
7/17/2012	3481.0	17.2	741.1	31.8	33.4	65.2	636.9	454.7	354.0	808.7	58.1	307.5	68.1	433.7	2425.2	40.6	808.7	741.1	65.2	0.0	43.0
7/18/2012	3770.6	11.8	729.3	31.8	61.0																

Table F1-5: Local Basin Scale Water Budget Equation (Units = Acre-Feet)

Caballo Reservoir to Downstream of American Dam																					
	Surface Water Budget															Groundwater Budget					
	Qus	P	Qp			Qgwrf	Qds			Qgwr				ET	ΔSsw	Qgwus	Qgwr	Qp	Qgwrf	Qgwds	ΔSgw
				MODFLOW Groundwater Return Flow to Rio Grande	MODFLOW 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
Date	River Below Caballo Dam	Precipitation Flows in River Channel	Pumping																		
8/28/2012	1418.2	8.0	727.1	31.8	65.7	97.5	834.3	406.8	354.0	760.9	58.1	307.5	64.1	429.7	225.8	40.6	760.9	727.1	97.5	0.0	-23.1
8/29/2012	1378.5	10.9	728.1	31.8	64.4	96.2	781.4	395.6	354.0	749.6	58.1	307.5	64.1	429.7	252.9	40.6	749.6	728.1	96.2	0.0	-34.1
8/30/2012	1394.4	16.6	729.4	31.8	56.6	88.4	750.0	383.2	354.0	737.2	58.1	307.5	64.1	429.7	311.9	40.6	737.2	729.4	88.4	0.0	-40.0
8/31/2012	1402.3	14.3	723.8	31.8	52.9	84.7	684.8	374.8	354.0	728.9	58.1	307.5	64.1	429.7	381.8	40.6	728.9	723.8	84.7	0.0	-39.1
9/1/2012	1410.2	8.9	721.1	31.8	55.0	86.8	649.6	374.9	354.0	728.9	58.1	307.5	51.6	417.2	431.3	40.6	728.9	721.1	86.8	0.0	-38.4
9/2/2012	1418.2	16.9	719.8	31.8	55.9	87.7	661.7	378.0	354.0	732.0	58.1	307.5	51.6	417.2	431.6	40.6	732.0	719.8	87.7	0.0	-34.9
9/3/2012	1243.6	10.6	718.6	31.8	54.5	86.3	671.2	377.6	354.0	731.6	58.1	307.5	51.6	417.2	239.1	40.6	731.6	718.6	86.3	0.0	-32.7
9/4/2012	1108.8	14.7	718.6	31.8	55.6	87.4	679.9	368.3	354.0	722.3	58.1	307.5	51.6	417.2	110.0	40.6	722.3	718.6	87.4	0.0	-43.1
9/5/2012	1108.8	20.1	721.1	31.8	61.1	93.0	707.0	360.1	354.0	714.1	58.1	307.5	51.6	417.2	104.5	40.6	714.1	721.1	93.0	0.0	-59.3
9/6/2012	1100.8	16.9	721.2	31.8	62.3	94.1	754.9	363.0	354.0	717.0	58.1	307.5	51.6	417.2	43.8	40.6	717.0	721.2	94.1	0.0	-57.6
9/7/2012	1092.9	18.1	717.2	31.8	59.3	91.1	780.1	363.2	354.0	717.2	58.1	307.5	51.6	417.2	4.7	40.6	717.2	717.2	91.1	0.0	-50.5
9/8/2012	1079.0	8.6	718.1	31.8	73.1	105.0	776.8	347.4	354.0	701.5	58.1	307.5	51.6	417.2	15.3	40.6	701.5	718.1	105.0	0.0	-81.0
9/9/2012	1065.1	8.5	718.0	31.8	79.2	111.0	652.1	317.7	354.0	671.7	58.1	307.5	51.6	417.2	161.7	40.6	671.7	718.0	111.0	0.0	-116.7
9/10/2012	1049.3	12.8	718.5	31.8	63.1	95.0	516.9	282.8	354.0	636.8	58.1	307.5	51.6	417.2	304.5	40.6	636.8	718.5	95.0	0.0	-136.0
9/11/2012	1035.4	14.8	715.6	31.8	57.8	89.7	392.0	250.1	354.0	604.2	58.1	307.5	51.6	417.2	442.0	40.6	604.2	715.6	89.7	0.0	-160.4
9/12/2012	1015.5	23.5	715.5	31.8	51.4	83.2	239.6	256.8	354.0	610.8	58.1	307.5	51.6	417.2	570.2	40.6	610.8	715.5	83.2	0.0	-147.3
9/13/2012	533.6	15.8	700.9	31.8	46.0	77.8	275.0	299.3	354.0	653.3	58.1	307.5	51.6	417.2	-17.5	40.6	653.3	700.9	77.8	0.0	-84.8
9/14/2012	0.0	14.6	700.8	31.8	46.4	78.2	630.0	301.6	354.0	655.6	58.1	307.5	51.6	417.2	-909.2	40.6	655.6	700.8	78.2	0.0	-82.8
9/15/2012	0.0	12.8	700.4	31.8	39.7	71.5	65.5	26.2	354.0	380.2	58.1	307.5	51.6	417.2	-78.2	40.6	380.2	700.4	71.5	0.0	-351.1
9/16/2012	0.0	10.8	700.4	31.8	34.4	66.2	37.2	23.6	354.0	377.6	58.1	307.5	51.6	417.2	-54.6	40.6	377.6	700.4	66.2	0.0	-348.4
9/17/2012	0.0	7.6	700.4	31.8	31.9	63.7	34.8	23.4	354.0	377.4	58.1	307.5	51.6	417.2	-57.7	40.6	377.4	700.4	63.7	0.0	-346.0
9/18/2012	0.0	10.1	699.6	31.8	30.2	62.0	33.7	23.3	354.0	377.3	58.1	307.5	51.6	417.2	-56.6	40.6	377.3	699.6	62.0	0.0	-343.6
9/19/2012	0.0	14.1	699.8	31.8	26.0	57.8	33.9	24.1	354.0	378.1	58.1	307.5	51.6	417.2	-57.6	40.6	378.1	699.8	57.8	0.0	-338.8
9/20/2012	0.0	10.5	698.8	31.8	21.0	52.8	34.2	28.3	354.0	382.3	58.1	307.5	51.6	417.2	-71.7	40.6	382.3	698.8	52.8	0.0	-328.7
9/21/2012	0.0	8.1	698.9	31.8	21.5	53.3	35.3	32.9	354.0	386.9	58.1	307.5	51.6	417.2	-79.1	40.6	386.9	698.9	53.3	0.0	-324.7
9/22/2012	0.0	15.7	694.5	31.8	21.1	52.9	37.7	31.6	354.0	385.6	58.1	307.5	51.6	417.2	-77.5	40.6	385.6	694.5	52.9	0.0	-321.1
9/23/2012	0.0	17.4	694.3	31.8	21.0	52.9	37.8	28.1	354.0	382.1	58.1	307.5	51.6	417.2	-72.5	40.6	382.1	694.3	52.9	0.0	-324.5
9/24/2012	0.0	12.6	694.3	31.8	21.3	53.1	36.2	24.5	354.0	378.6	58.1	307.5	51.6	417.2	-72.0	40.6	378.6	694.3	53.1	0.0	-328.3
9/25/2012	0.0	18.9	694.1	31.8	20.9	52.7	34.8	23.2	354.0	377.2	58.1	307.5	51.6	417.2	-63.6	40.6	377.2	694.1	52.7	0.0	-329.0
9/26/2012	0.0	7.4	682.5	31.8	20.7	52.5	34.4	22.9	354.0	377.0	58.1	307.5	51.6	417.2	-86.2	40.6	377.0	682.5	52.5	0.0	-317.4
9/27/2012	0.0	5.9	682.4	31.8	20.7	52.5	34.2	23.0	354.0	377.1	58.1	307.5	51.6	417.2	-87.6	40.6	377.1	682.4	52.5	0.0	-317.3
9/28/2012	0.0	3.7	683.3	31.8	20.7	52.5	34.2	23.0	354.0	377.0	58.1	307.5	51.6	417.2	-88.9	40.6	377.0	683.3	52.5	0.0	-318.2
9/29/2012	0.0	9.5	682.1	31.8	20.8	52.6	34.0	23.0	354.0	377.0	58.1	307.5	51.6	417.2	-84.1	40.6	377.0	682.1	52.6	0.0	-317.1
9/30/2012	0.0	9.4	678.9	31.8	21.0	52.9	34.0	22.8	354.0	376.9	58.1	307.5	51.6	417.2	-86.9	40.6	376.9	678.9	52.9</		

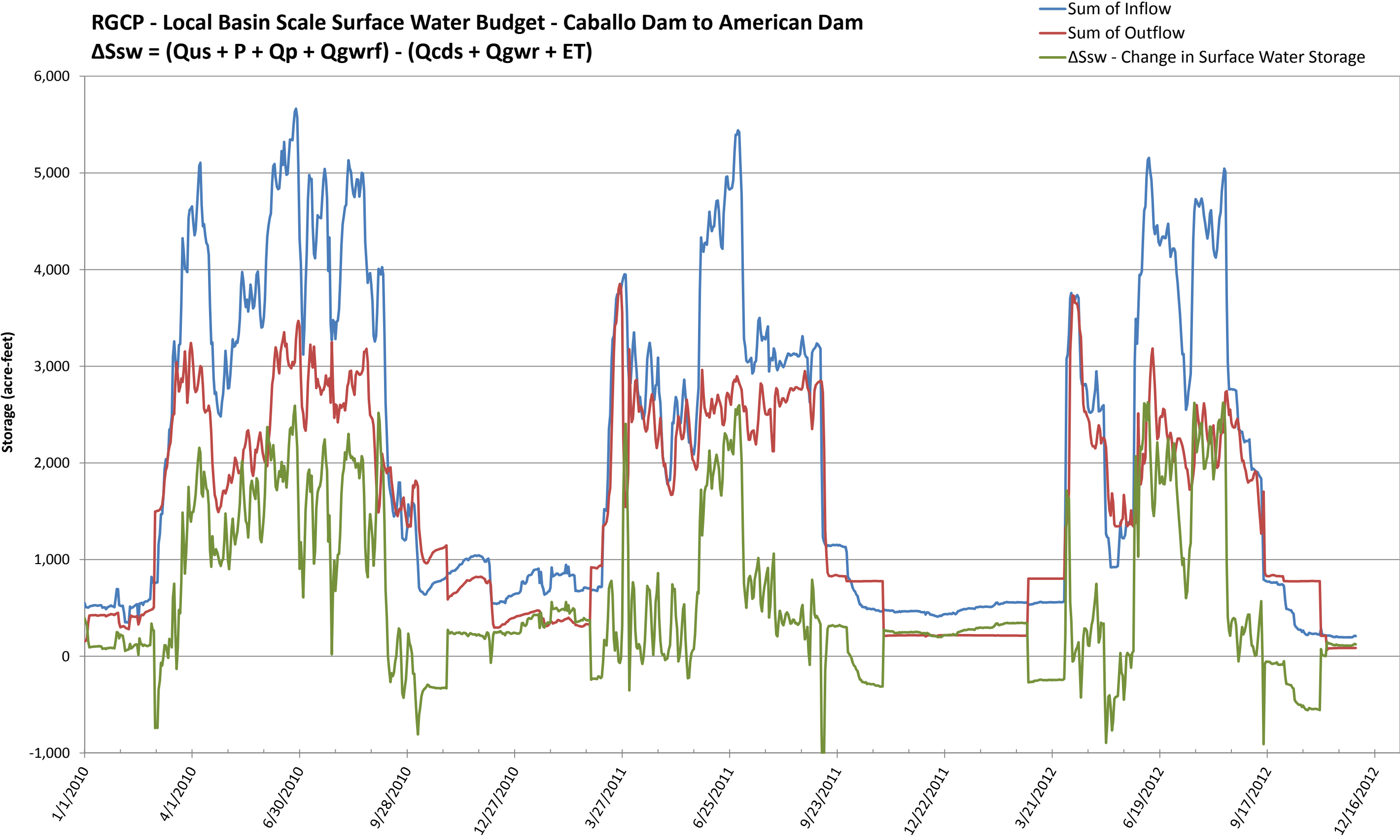


Table F1-5: Local Basin Scale Water Budget Equation      (Units = Acre-Feet)

Caballo Reservoir to Downstream of 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	MODFLOW 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
11/11/2012	0.0	3.8	109.4	59.1	26.9	86.1	36.6	24.7	3.7	28.4	18.4			18.4	-15.8	87.8	28.4	109.4	86.1	0.0	-79.2
11/12/2012	0.0	5.9	109.4	59.1	25.8	84.9	37.0	24.9	3.7	28.7	18.4			18.4	-15.6	87.8	28.7	109.4	84.9	0.0	-77.9
11/13/2012	0.0	4.9	107.9	59.1	25.9	85.0	37.0	25.2	3.7	28.9	18.4			18.4	-18.2	87.8	28.9	107.9	85.0	0.0	-76.2
11/14/2012	0.0	12.3	107.9	59.1	26.2	85.3	37.2	25.3	3.7	29.1	18.4			18.4	-11.0	87.8	29.1	107.9	85.3	0.0	-76.3
11/15/2012	0.0	4.4	107.9	59.1	26.6	85.7	37.3	25.4	3.7	29.1	18.4			18.4	-18.5	87.8	29.1	107.9	85.7	0.0	-76.6
11/16/2012	0.0	5.3	108.8	59.1	27.1	86.2	37.3	25.6	3.7	29.3	18.4			18.4	-16.5	87.8	29.3	108.8	86.2	0.0	-77.8
11/17/2012	0.0	2.2	108.8	59.1	27.2	86.3	37.3	25.6	3.7	29.3	18.4			18.4	-19.5	87.8	29.3	108.8	86.3	0.0	-77.9
11/18/2012	0.0	2.0	108.8	59.1	27.7	86.8	37.5	25.4	3.7	29.2	18.4			18.4	-19.3	87.8	29.2	108.8	86.8	0.0	-78.6
11/19/2012	0.0	2.1	109.1	59.1	27.8	87.0	37.4	25.3	3.7	29.1	18.4			18.4	-18.5	87.8	29.1	109.1	87.0	0.0	-79.2
11/20/2012	0.0	0.7	109.1	59.1	26.0	85.1	37.4	25.4	3.7	29.1	18.4			18.4	-21.8	87.8	29.1	109.1	85.1	0.0	-77.3
11/21/2012	0.0	0.9	109.1	59.1	27.0	86.1	37.7	25.5	3.7	29.2	18.4			18.4	-21.0	87.8	29.2	109.1	86.1	0.0	-78.1
11/22/2012	0.0	2.3	108.6	59.1	27.1	86.2	37.8	25.6	3.7	29.3	18.4			18.4	-20.2	87.8	29.3	108.6	86.2	0.0	-77.6
11/23/2012	0.0	1.9	108.6	59.1	25.5	84.6	38.2	25.6	3.7	29.4	18.4			18.4	-22.5	87.8	29.4	108.6	84.6	0.0	-76.0
11/24/2012	0.0	5.7	108.6	59.1	25.1	84.2	38.3	25.7	3.7	29.4	18.4			18.4	-19.3	87.8	29.4	108.6	84.2	0.0	-75.6
11/25/2012	0.0	3.0	108.6	59.1	24.3	83.5	38.3	25.5	3.7	29.2	18.4			18.4	-22.6	87.8	29.2	108.6	83.5	0.0	-75.0
11/26/2012	0.0	3.7	108.6	59.1	24.7	83.8	37.8	25.7	3.7	29.4	18.4			18.4	-21.3	87.8	29.4	108.6	83.8	0.0	-75.1
11/27/2012	0.0	5.7	108.6	59.1	23.8	83.0	37.6	25.7	3.7	29.5	18.4			18.4	-20.0	87.8	29.5	108.6	83.0	0.0	-74.2
11/28/2012	0.0	5.3	108.6	59.1	30.3	89.4	37.2	25.8	3.7	29.6	18.4			18.4	-13.6	87.8	29.6	108.6	89.4	0.0	-80.6
11/29/2012	0.0	4.5	111.2	59.1	37.9	97.1	37.0	25.8	3.7	29.6	18.4			18.4	-4.0	87.8	29.6	111.2	97.1	0.0	-90.8
11/30/2012	0.0	2.8	111.1	59.1	34.9	94.0	36.9	25.9	3.7	29.6	18.4			18.4	-8.8	87.8	29.6	111.1	94.0	0.0	-87.6

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

**$\Delta S_{sw} = (Q_{us} + P + Q_p + Q_{gwrf}) - (Q_{cds} + Q_{gwr} + ET)$**



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

**$\Delta S_{gw} = (Q_{gwus} + Q_{gwr}) - (Q_p + Q_{gwr}f + Q_{gwds})$**

- Sum of Inflow
- Sum of Outflow
- $\Delta S_{gw}$  - Change in Ground Water Storage

