OFFICE OF THE GOVERNOR

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GOVERNOR

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STATE OF ALABAMA

July 15, 2013

Honorable Barbara Boxer
112 Hart Senate Office Building
Washington, D.C. 20510

Honorable David Vitter
516 Hart Senate Office Building
Washington, D.C. 20510

Dear Chairman Boxer and Senator Vitter:

Thank you for sending me a copy of your letter to the Assistant Secretary of the Army for Civil Works dated May 15, 2013. I share your committee's concern about the Corps' disregard of its obligations under the Water Supply Act of 1958 in its management of federal reservoirs in the Alabama-Coosa-Tallapoosa (ACT) River Basin and the Apalachicola-Chattahoochee-Flint (ACF) River Basin.

Congress, in the Water Supply Act, reserved the authority to approve significant reallocations of federal reservoirs for local water-supply purposes. Nonetheless, the Corps has failed to obtain Congressional approval for the major operational changes it has made at Lake Lanier and Lake Allatoona in Georgia to meet Atlanta's water-supply demands.

The Corps' illegal actions at those two reservoirs have significant adverse consequences for the State of Alabama and its citizens. I have attached a report that Alabama's Office of Water Resources prepared showing how the increasing water-supply uses of the two reservoirs has resulted in lower flows for downstream communities. The report also highlights some of the resulting negative consequences to Alabama.

Like you, I believe that a negotiated solution among the three States is the best way to solve the longstanding dispute concerning the ACT and ACF Basins. But the Corps' adherence to the Water Supply Act is essential if we are going to make any progress in reaching a settlement.

Sincerely,

Robert Bentley

Robert Bentley
Governor

c: Senator Richard Shelby
Senator Jeff Sessions

Analysis of Demands, Flows and Operations Upstream from Alabama

Alabama-Coosa-Tallapoosa & Apalachicola-Chattahoochee-Flint River Basins

OWR
The Office of Water Resources
A Division of ADECA

July 12, 2013

Office of Water Resources

ADECA's Office of Water Resources (OWR) administers programs for river basin management, river assessment, water supply assistance, water conservation, flood mapping, the National Flood Insurance Program and water resources development. Further, OWR serves as the state liaison with federal agencies on major water resources related projects and conducts any special studies on instream flow needs as well as administering environmental education and outreach programs to increase awareness of Alabama's water resources. OWR's mission states that the office plans, coordinates, develops and manages Alabama's water resources, both ground and surface water, in a manner that is in the best interest of the state. This includes recommending policies and legislation, conducting technical studies, implementing and participating in programs and projects and actively representing Alabama's intra and interstate water resource interests.

Analysis

OWR reviewed available data and information to create this analysis focused on how the activities of the Corps of Engineers and other Georgia governmental entities in the Apalachicola-Chattahoochee-Flint (ACF) River Basin and the Alabama-Coosa-Tallapossa (ACT) River Basin have impacted Alabama's water resources. This analysis addresses how the upstream water resources have changed over time in a way that is negative to Alabama. This analysis is meant to complement previous work performed by this office such as the comments submitted regarding the draft environmental impact statement associated with the Corps' proposed ACT manual. This analysis address streamflows, demands and operations in both the ACT and ACF River Basins. Specifically in the ACT River Basin, OWR analyzed (1) the Cobb County Marietta Water Authority (CCMWA) withdrawals and storage accounting calculations; (2) the long term trends of the CCMWA withdrawals and streamflows at Allatoona and Rome; and (3) the Corps use of storage augmentation during droughts at Allatoona. Similar to the ACT analysis. OWR's ACF analysis includes (1) the long term trends of the Gwinnett County withdrawals, streamflows at Buford and Atlanta and (2) the Corps use of storage augmentation during droughts at Lake Lanier. Finally, water-quality impacts as a result of reduced streamflows in the ACT and ACF were also evaluated.

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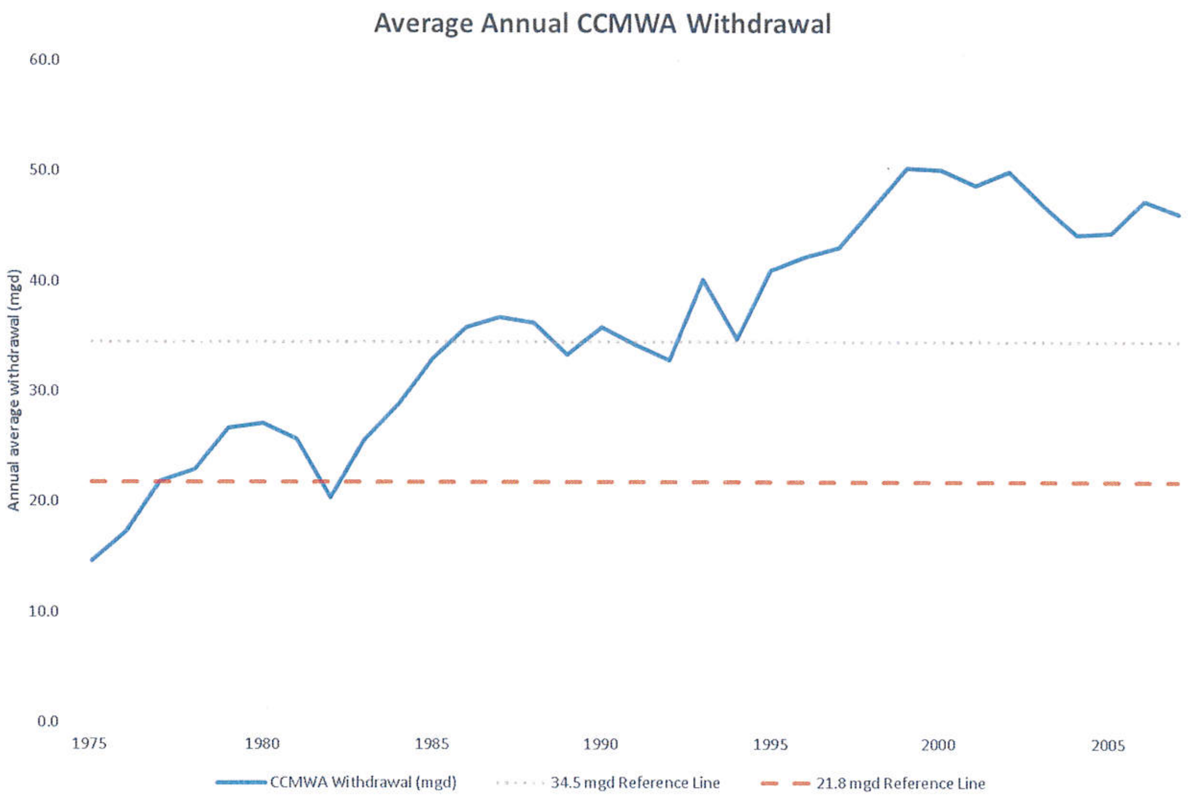
CCMWA Growing Withdrawals

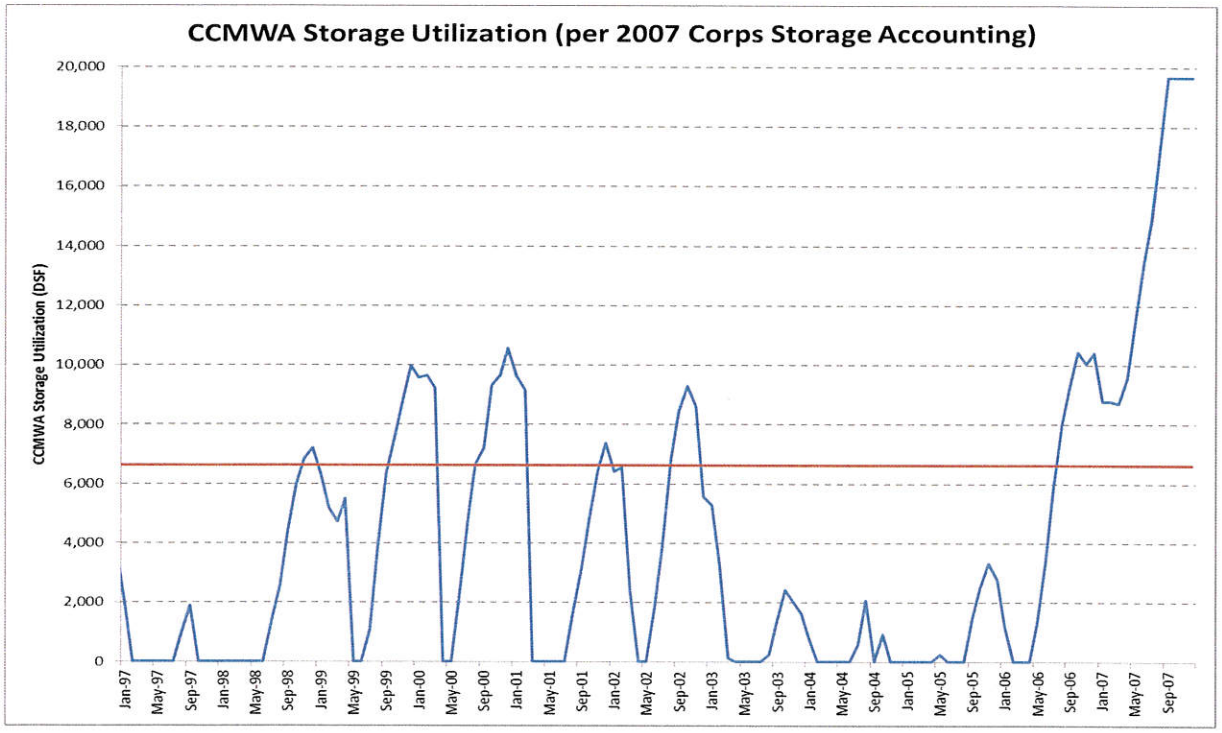
The following graph shows the average annual Cobb County Marietta Water Authority (CCMWA) withdrawals from Lake Allatoona. CCMWA has a storage allocation contract for 13,140 acre-feet of Lake Allatoona. 13,140 acre-feet represents 4.62% of Lake Allatoona's conservation storage pool. When the contract was originally written, 13,140 acre-feet was expected to yield 34.5 mgd. The Corps allowed CCMWA to exceed 34.5 mgd since the mid 1980's. The expected yield of CCMWA's 13,140 acre-feet is directly related to the critical yield of Lake Allatoona. Since there have been more severe droughts at Lake Allatoona since the 1960's, the yield of Lake Allatoona (and the expected yield of CCMWA's 13,140 acre-feet) has been reduced over time. The current yield of Lake Allatoona as calculated by the Corps is 729 cfs. Since, CCMWA's expected yield is 4.62% of the critical yield, the current expected yield of CCMWA's 13,140 acre-feet is 21.8 mgd. For reference, both the 34.5 mgd and 21.8 mgd lines are shown on the graph below. CCMWA's average annual withdrawals have been exceeding 21.8 mgd since the early 1980's.



CCMWA Storage Accounting

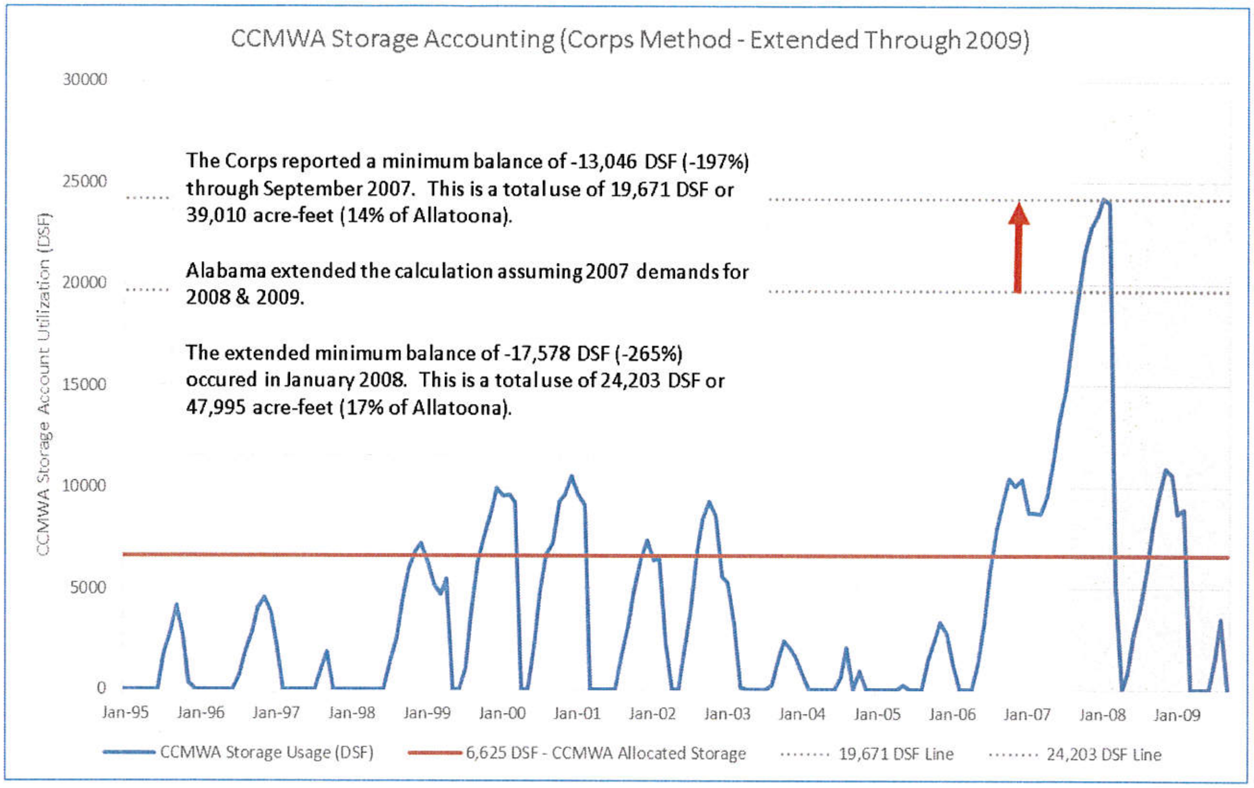
In late 2007, OWR received a storage accounting spreadsheet used by the Corps of Engineers to track CCMWA's utilization of its allocated 13,140 acre-feet (13,140 acre-feet is equal to 6,625 DSF).

The storage accounting spreadsheet provided by the Corps included monthly calculations through September 2007. The following graph is a plot of the storage utilization data contained in the storage accounting spreadsheet.



The blue line in the above graph shows the CCMWA storage utilization as calculated by the Corps. The red reference line shows the CCMWA allocated storage (13,140 acre-feet or 6,625 DSF). The Corps has allowed CCMWA to exceed its allocated storage amount repeatedly beginning in the late 1990's. The Corps' spreadsheet shows a CCMWA storage utilization of 19,671 DSF (approximately 39,000 acre-feet) in September of 2007. 19,671 DSF storage utilization was comprised of the 6,625 DSF allocated storage and a 13,046 DSF overutilization of storage.

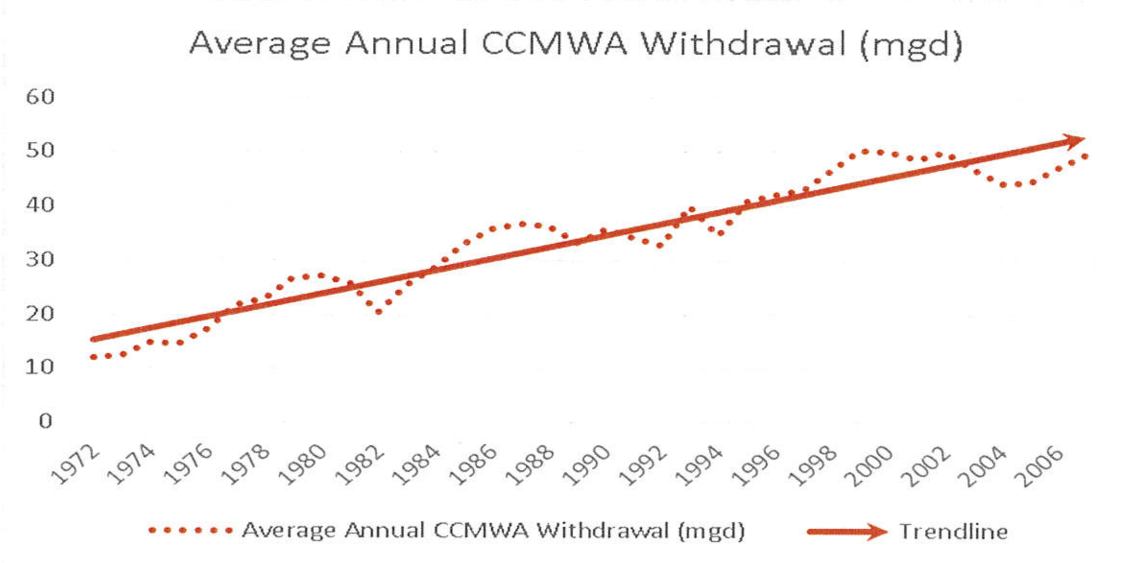
The Corps has yet to provide aset of storage utilization calculations updated after September 2007. Since the drought was not over when the Corps stopped its storage accounting calculations, OWR extended the calculations contained in the Corps spreadsheet through 2009 to get a complete picture of the CCMWA storage utilization. OWR had access to CCMWA withdrawal data through the end of 2007 and simply assumed that the 2008 and 2009 withdrawals were equal to the withdrawals in 2007. The graph of the extended storage utilization is shown below.

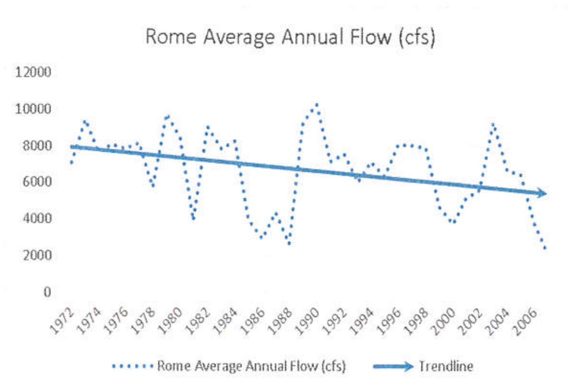


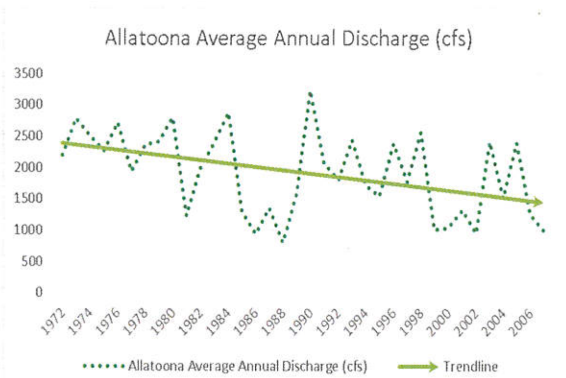
CCMWA Storage Accounting (Corps Method - Extended Through 2009)
The Corps reported a minimum balance of -13,046 DSF (-197%) through September 2007. This is a total use of 19,671 DSF or 39,010 acre-feet (14% of Allatoona).
Alabama extended the calculation assuming 2007 demands for 2008 & 2009.
The extended minimum balance of -17,578 DSF (-265%) occured in January 2008. This is a total use of 24,203 DSF or 47,995 acre-feet (17% of Allatoona).
CCMWA Storage Account Utilization (DSF)
30000
25000
20000
15000
10000
5000
0
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
CCMWA Storage Usage (DSF)
6,625 DSF - CCMWA Allocated Storage
19,671 DSF Line
24,203 DSF Line

ACT Long Term Demand and Flow Trend

Thirty-six years of data were analyzed to determine the long-term trend of water supply withdrawals and flows. Specifically, the average annual data for the 1972 – 2007 period was plotted for the following three parameters: (1) Cobb County Marietta Water Authority (CCMWA) withdrawals, (2) Allatoona discharges and (3) Rome flow. A trend line (using Microsoft Excel) was then applied to the data. The 1972 – 2007 period was selected since that was the period of time that OWR had withdrawal data for CCMWA.





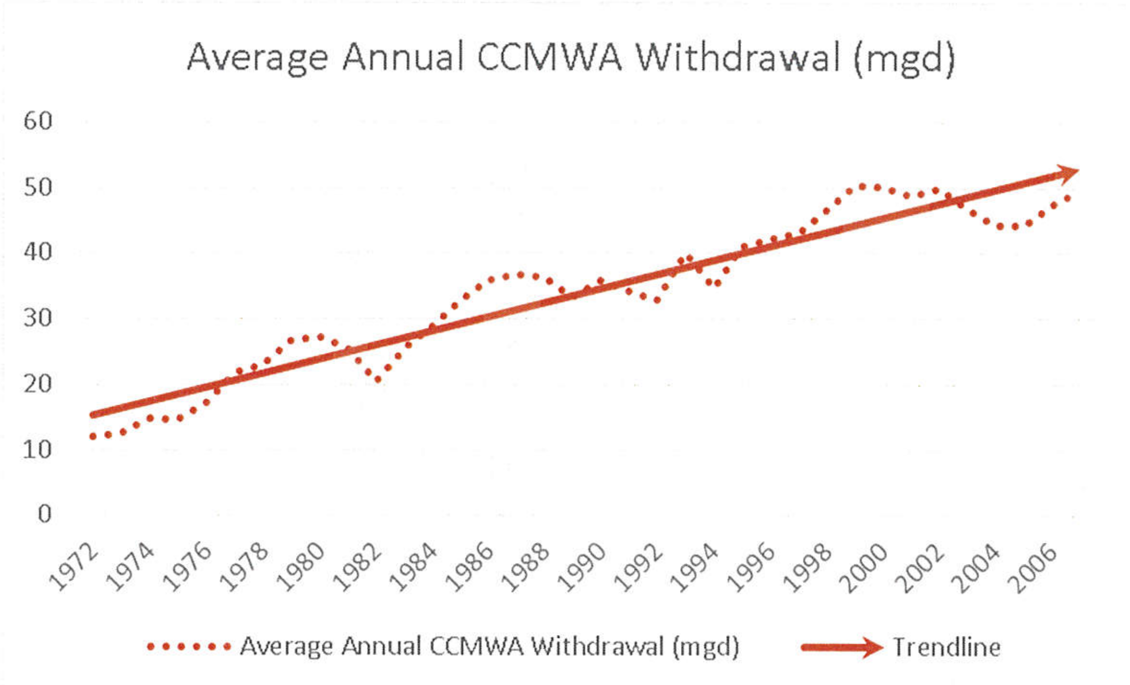


The above three graphs show that where the CCMWA withdrawals have steadily increased over time, the Allatoona discharges and Rome flow have steadily decreased over time. The data used to create the plots is contained in Exhibit A.

Corps' Declining Use of Allatoona Storage to Benefit Downstream Flows

OWR analyzed the Corps' operations at Lake Allatoona and how those operations changed over the same time that the CCMWA withdrawals were increasing. Using the same 1972 – 2007 period (period when OWR had access to CCMWA withdrawal data), OWR identified the four significant drought periods. OWR focused on the drought period operations since that is the time when the Corps' releases have the most impact on the flows into Alabama. The drought periods analyzed, and highlighted in the following graph, were 1981, 1986-1988, 1999-2002, and 2007-2008.

The shaded area in the following graph shows the drought periods.



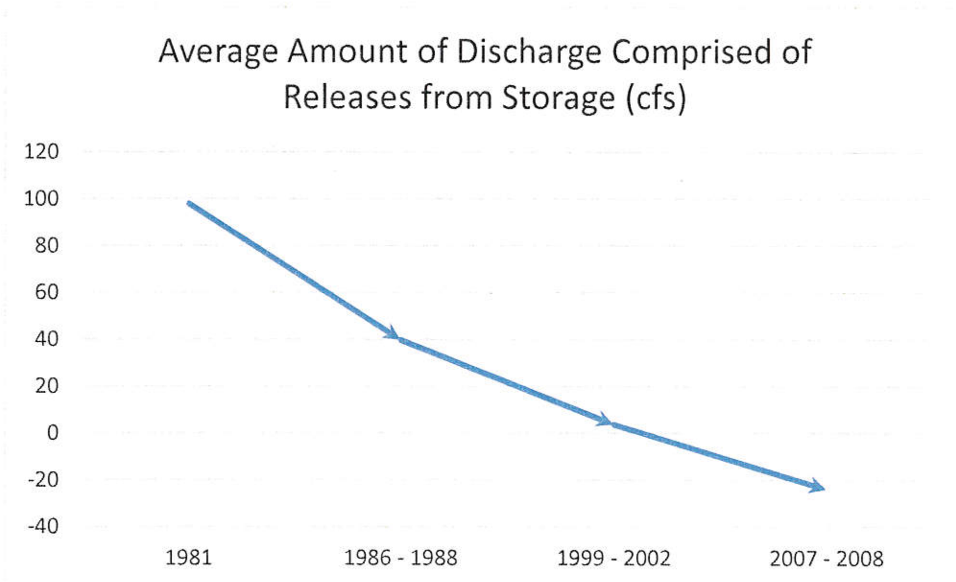
The following table shows the data from the analysis of the Corps' operations of Allatoona.

Drought Period (Water Years)	Average Inflow (cfs)	Average Discharge (cfs)	Average Amount of Discharge Comprised of Releases from Storage (cfs)	Percent of Discharge Coming from Storage (%)	End of Drought Period Elevation	Average CCMWA Withdrawal (mgd)
1981	1,128	1,226	98	8%	826.77	26
1986 - 1988	996	1,035	40	4%	829.45	36
1999 - 2002	1,084	1,088	4	0%	831.46	50
2007 - 2008	838	814	-24	-3%	834.40	47

This table shows that as the CCMWA usage grew over time, the Corps' usage of Allatoona to augment downstream flows decreased over time. In fact, the 2007-2008 average release from storage was negative, indicating that the Corps actually stored water during this critical drought instead of using the project to augment downstream flows.

As the CCMWA demands increased, the Corps altered its operations and abandoned the fundamental common sense principal of reservoirs - store water during high flow times and release water when it is needed. In fact as the droughts progressed, the Corps used less of Allatoona's storage to augment downstream flows. In fact, as a result of the Corps' operations, the downstream interests would have actually been better off in the 2007-2008 drought if Allatoona didn't even exist. This is because during the 2007-2008 drought the Corps actually stored inflow instead of releasing it downstream.

The following are graphical depictions of the data from the above table.



The above graph shows that as the droughts progressed, the Corps stopped releasing any previously stored water to augment flows downstream. In fact, in the 2007-2008 drought on average the Corps released less water than it received as inflow.

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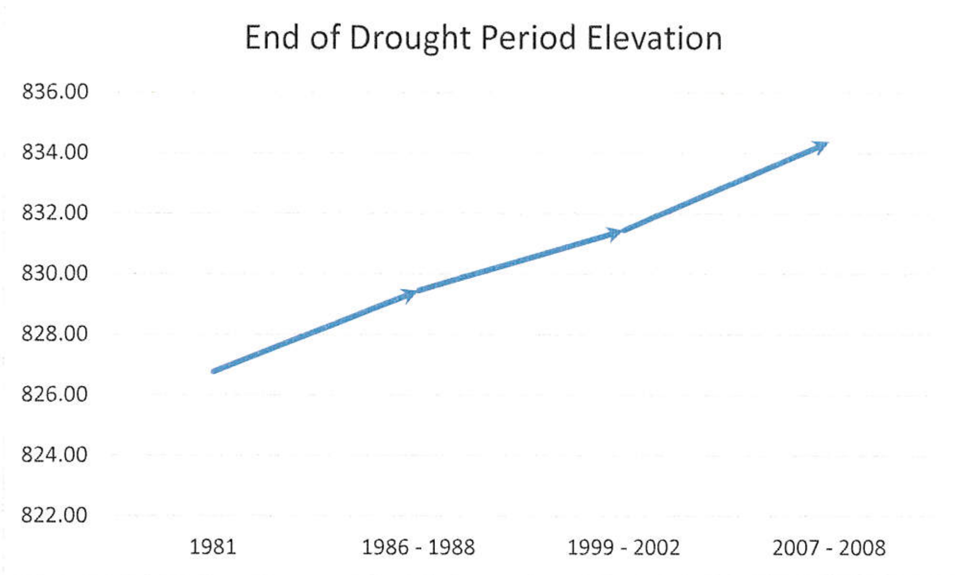

OWR plotted the elevation at Lake Allatoona at the end of the drought periods analyzed in the above table. This plot is shown above. This plot shows that as time progressed the Corps allowed CCMWA to withdraw more water than allowed by their contract, withheld more flow from downstream interests and maintained higher lake elevations to benefit recreation.

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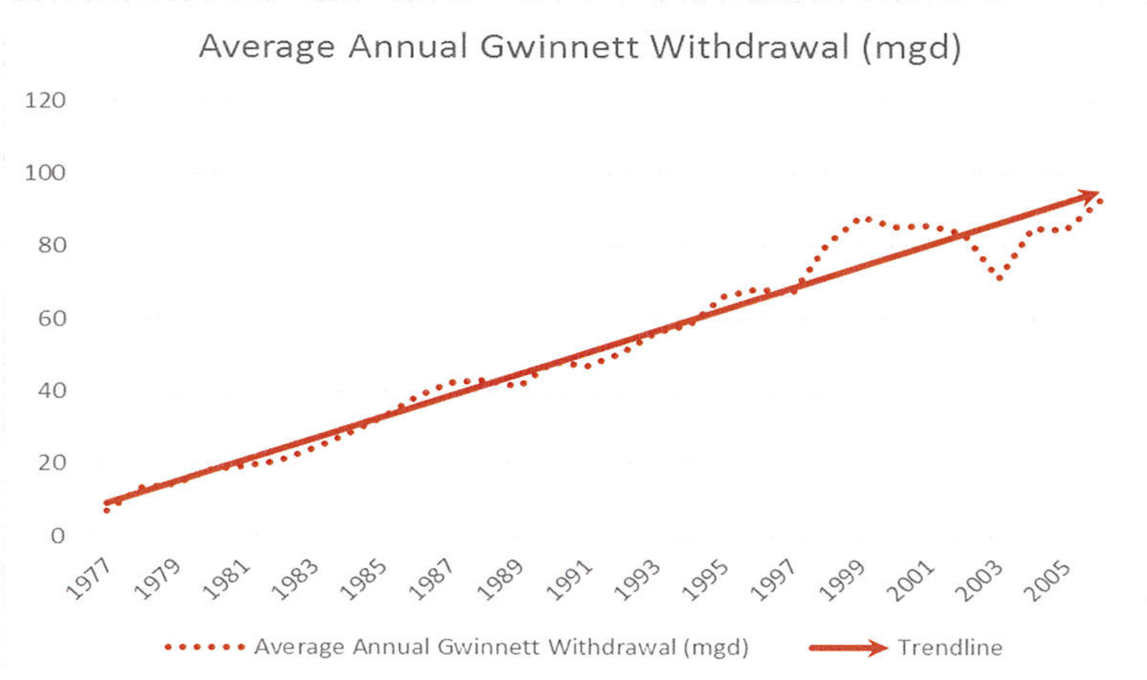
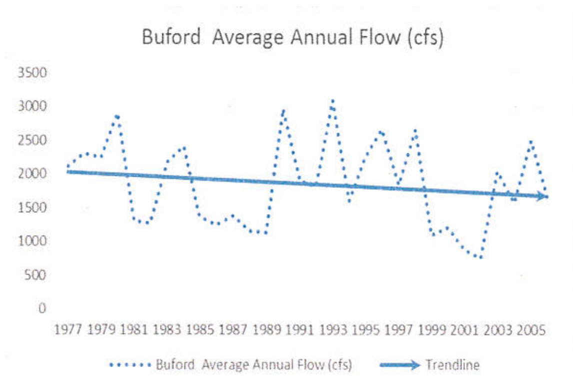
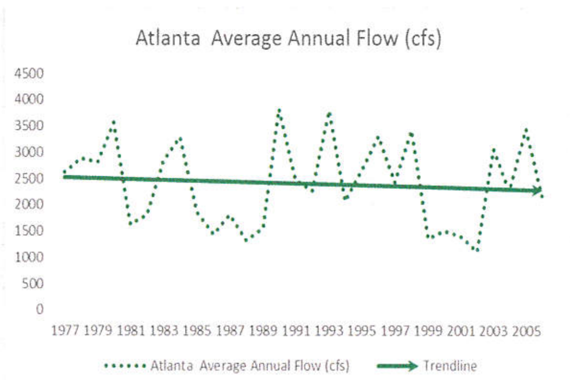
ACF Long Term Trend of Flows and Demands

Thirty years of data were analyzed to determine the long term trend of water supply withdrawals and flows related to Lake Lanier in the ACF Basin. Specifically, the average annual data for the 1977 – 2006 period was plotted for the following three parameters: (1) Gwinnett County, GA withdrawals, (2) Lake Lanier (Buford) discharges and (3) Atlanta flow. A trend line (using Microsoft Excel) was then applied to the data. The 1977 – 2006 period was selected since that was the period of time that OWR had withdrawal data for Gwinnett.





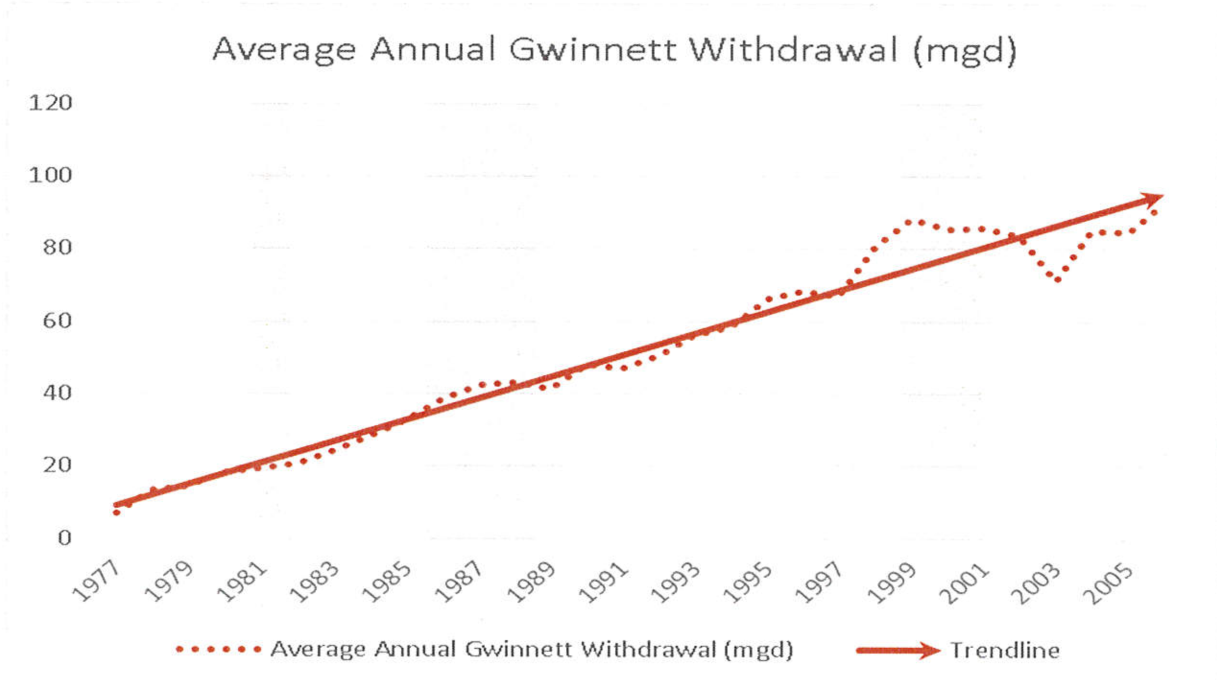


The above three graphs show that where the Gwinnett withdrawals have steadily increased over time, the Buford discharges and Atlanta flow have steadily decreased over time. The data used to create the plots is contained in Exhibit A.

Corps' Declining Use of Lanier Storage to Benefit Downstream Flows

OWR analyzed the Corps' operations at Lake Lanier and how those operations changed over the same time that the Gwinnett County withdrawals were increasing.

OWR selected the three most recent droughts that occurred during the 1977 – 2006 period. As discussed in the previous section, the 1977 – 2006 period was selected since it was the period that OWR had access to the Gwinnett withdrawal data. OWR focused on the drought period operations since that is the time when the Corps' releases have the most impact on the flows into Alabama. The drought periods analyzed, and highlighted in the following graph, were 1981, 1986-1988, 1999-2001.



The following table shows the data from the analysis of the Corps' operations of Lake Lanier

Drought Period	Average Inflow (cfs)	Average Discharge (cfs)	Average Amount of Discharge Comprised of Releases from Storage (cfs)	Percent of Discharge Coming from Storage (%)	Average Monthly Elevation (ft-msl)	Average Annual Withdrawal from Lanier (mgd)
1981	918	1,327	409	31%	1062.13	24
1986 - 1988	984	1,111	127	11%	1062.32	47
1999 - 2001	1,015	1,070	55	5%	1062.80	108

The above table shows that as Gwinnett's usage grew over time, the Corps decreased its use of Lanier's storage to augment downstream flows.

The following are graphical depictions of the data from the above table.

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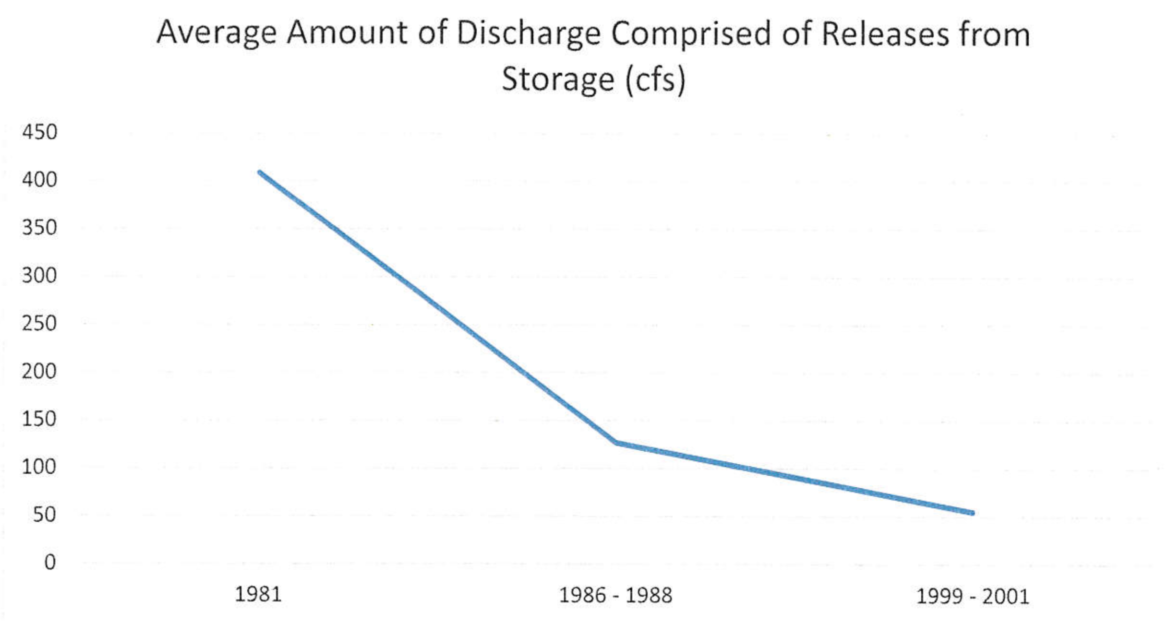
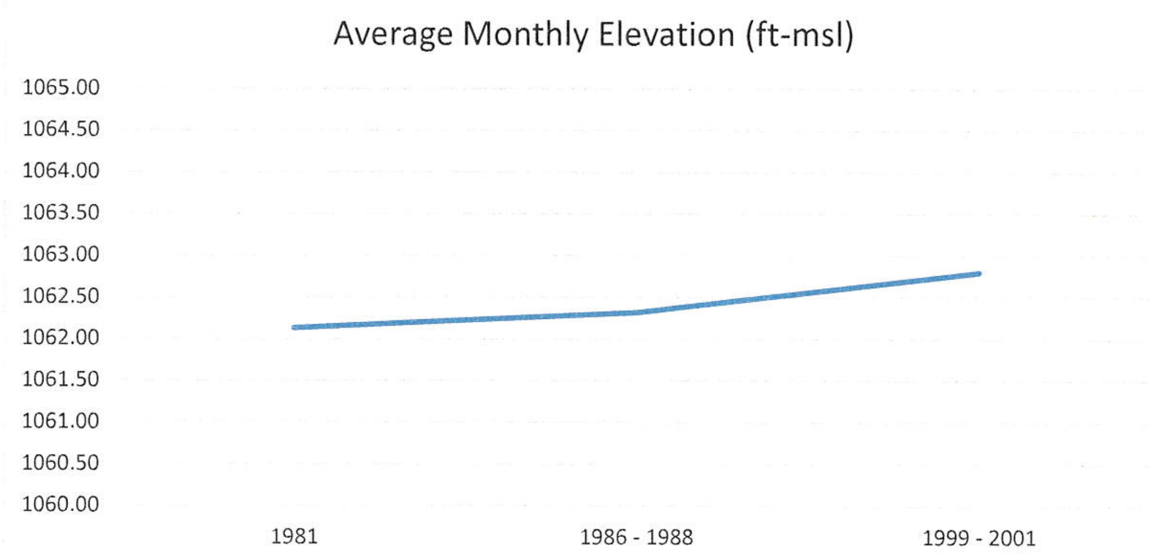


Average Amount of Discharge Comprised of Releases from Storage (cfs)
450
400
350
300
250
200
150
100
50
0
1981
1986 - 1988
1999 - 2001



Average Monthly Elevation (ft-msl)
1065.00
1064.50
1064.00
1063.50
1063.00
1062.50
1062.00
1061.50
1061.00
1060.50
1060.00
1981
1986 - 1988
1999 - 2001

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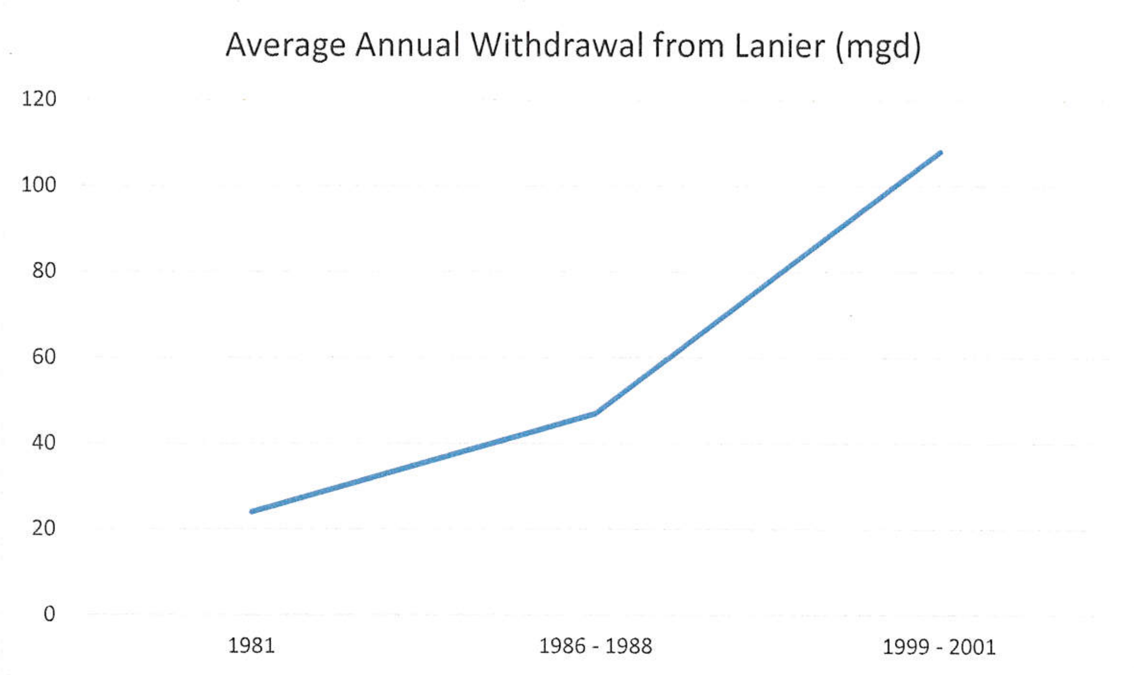


Average Annual Withdrawal from Lanier (mgd)
120
100
80
60
40
20
0
1981
1986 - 1988
1999 - 2001

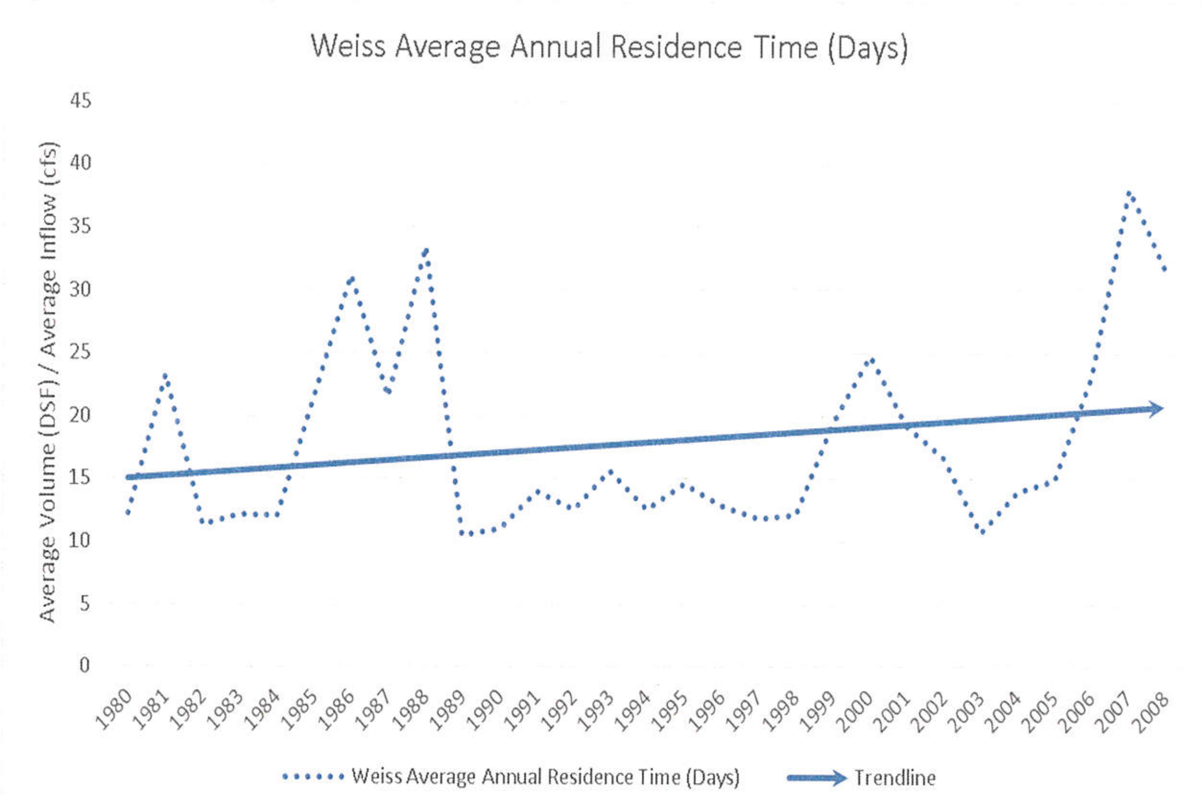
Water Quality

Reduced streamflows at the state line result in adverse water quality conditions in Alabama, such as reduced dissolved oxygen levels in Weiss Reservoir, and may affect protected species and designated critical habitat in the Coosa and Alabama Rivers further downstream. In the recent draft Environmental Impact Statement prepared by the Corps for the ACT manual, the Corps acknowledged that the reduced flows under its proposed alternative would result in adverse downstream environmental impacts, including but not limited to downstream industrial, municipal, and recreational water use in the State of Alabama.

Weiss Lake, the first reservoir on the Coosa River downstream from Lake Allatoona and Carters Lake, is currently listed as impaired by the Alabama Department of Environmental Management (ADEM) due to excessive nutrient loading. ADEM and the U.S. Environmental Protection Agency (USEPA) have adopted a Total Maximum Daily Load (TMDL) for Nutrient Impairment in Weiss Lake. Weiss Lake is susceptible to increased algal productivity during periods of drought. Lower flows resulting in increased residence time also worsen this situation. Residence time is a calculation of the amount of time it takes for water to flow through a reservoir. Generally, the higher the residence time or longer that it takes for water to flow through a reservoir has a negative impact on water quality. If water stays in a reservoir longer, then the water becomes more stagnant which will cause water quality conditions in the lake to decline.

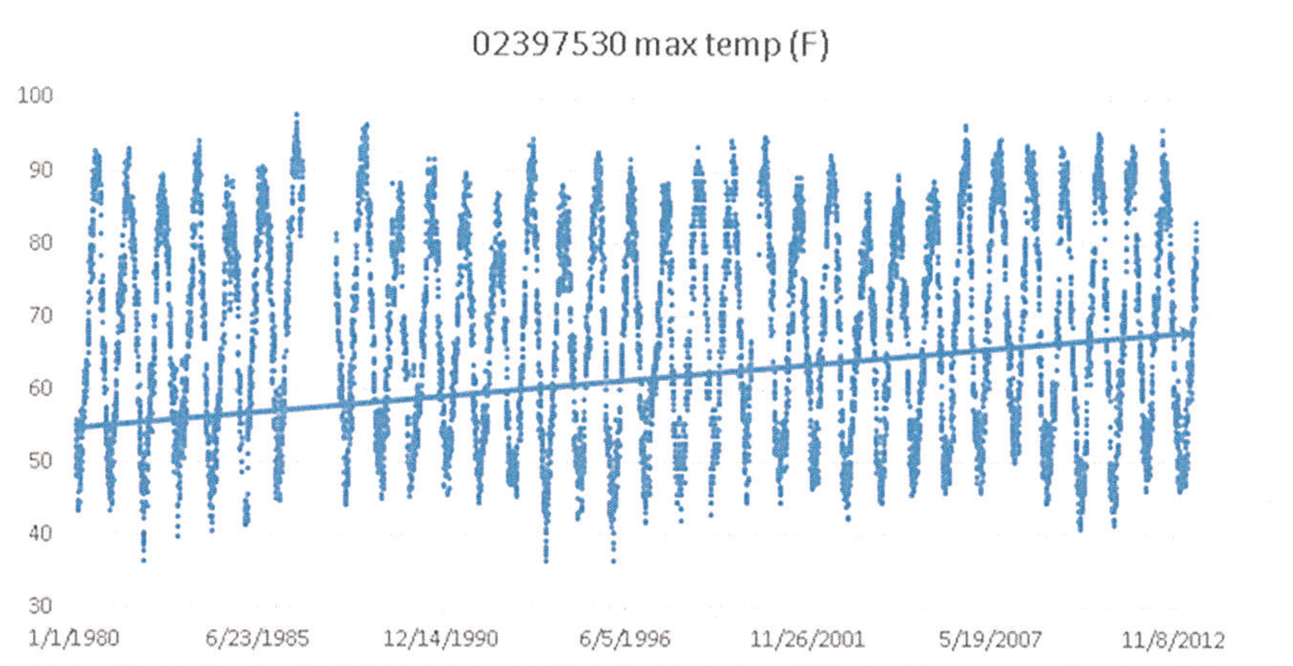
Other water quality parameters are also significantly affected by reduced flow into Weiss Lake and the resulting increase in residence time. These include dissolved oxygen, temperature and pH. Weiss Lake is already experiencing problems with these water quality criteria, especially in time of drought.

As discussed above, Weiss' residence time is a good overall indicator of the expected quality at the lake. With everything else being equal, less flow coming into Weiss will result in higher residence time and in turn lower water quality conditions. The following graphs shows that as the flows entering Alabama have trended down over time, the residence time at Weiss has trended up.

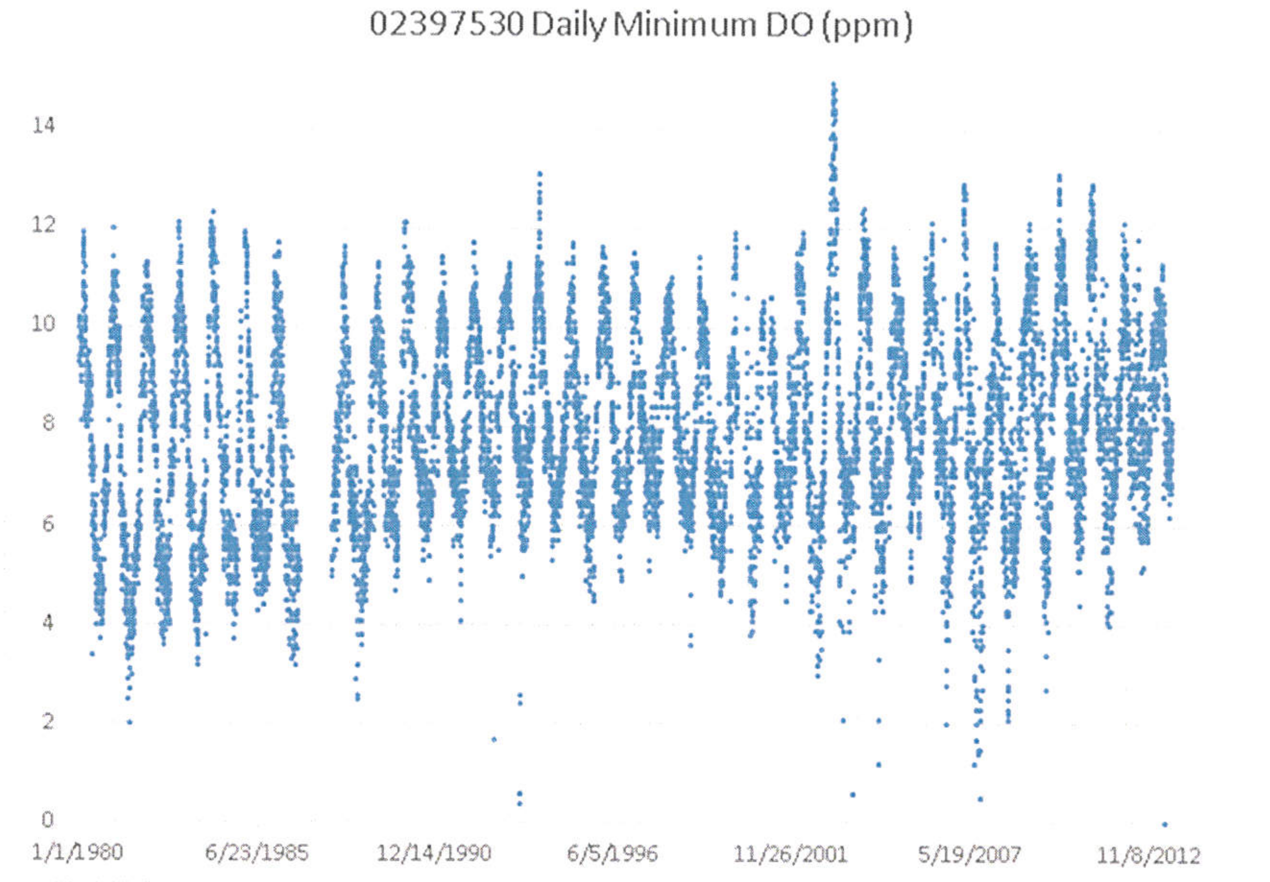


In addition to analyzing residence time at Weiss Lake, OWR also analyzed water quality data from the USGS gage located at the stateline on the Coosa River. Two water quality parameters were plotted and are shown below.

The following graph, shows the maximum daily temperature as recorded at the stateline USGS gage. This graph shows that on numerous occasions Alabama's water quality standard for temperature (90 degrees Fahrenheit) was exceeded. Also, the overall trend of the temperature of the water entering Alabama has been upward over the same period that the Corps has allowed excessive CCMWA withdrawals and altered its operations to withhold more of the inflow during critical drought conditions (as discussed earlier in this report).



The following graph, shows the minimum daily dissolved oxygen as recorded at the stateline USGS gage. This graph shows that on numerous occasions Alabama's water quality standard for dissolved oxygen (5 mg/l) was not met. This graph shows that the lower dissolved oxygen reading are more likely to occur when the Corps is releasing less water from Allatoona.



Lastly, with regard to water quality impacts in both the ACT and ACF basins, in 2009 the State of Alabama wrote a letter to the Corps of Engineers requesting action by the Corps to help protect water quality. This letter, attached as Exhibit B, addressed how the Corps operations impacts water quality in both the ACT and ACF basins. This letter highlights some of the water quality problems that had been observed in the recent droughts as well as explaining how the Corps operations directly impact water quality.

Conclusion

OWR's analysis of the withdrawal data, stream flows and Corps' operational data in both the ACT and ACF River basins has shown that over time:

1. Water withdrawals by Georgia entities for municipal and industrial water supply have increased
2. CCMWA has repeatedly used more storage at Lake Allatoona than it was allowed to use.
3. Flows coming into Alabama have decreased while Georgia parties have withdrawn more and the Corps has held reservoir elevation higher
4. The Corps has altered its operations to the detriment of downstream flow augmentation
5. Water quality, which is highly dependent upon flow, has worsened.

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Exhibit A

Data Used for Flow and Demand Trend Plots

Cobb County Marietta Water Authority Withdrawal Data

WATER WITHDRAWALS -- ALLATOONA LAKE, GEORGIA -- ETOWAH RIVER -- ALABAMA/COOSA RIVER BASIN
Monthly and Annual Withdrawal Totals in Millions of Gallons (MG);Average Daily Withdrawals (MGD); and Annual Peak Day Withdrawal (MG)

COBB COUNTY - MARIETTA WATER AUTHORITY Water Storage Space Contract No. DA-01-076-CIVENG-64-116
Allocated Storage Space, 4.61% (13,140 acre feet) of the project's conservation storage space (285,000 acre feet) needed to yield an annual average of 34.5 mgd of water during droughts equivalent to the 31 month drought from July 39 - Jan 42.

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL ANNUAL (MG)	AVE. ANNUAL (MGD)	PEAK DAY (MG)	YTD Days	Peak Day Date
				MONTHLY TOTALS IN MILLIONS OF GALLONS (MG)													
1965																	
1966					37.2	141.4	249.5	214.0	175.6	150.3	129.1	109.0	1206.1	3.30			
1967	87.8	87.5	95.6	102.8	143.6	172.8	201.2	249.7	261.9	272.0	257.9	263.4	1822.5	6.02			
1968	269.0	226.1		226.1	254.0	296.1	342.7	366.2	335.6	329.0	295.0	290.7	2509.3	8.85			
1969	295.5	364.7	298.2			356.1			338.2	330.4	321.2	303.7	1649.6	7.15			
1970													0.0				
1971													0.0				
1972													0.0	11.90	15.90		
1973							410.5	443.0	448.9	416.7	380.3	377.9	2477.3	12.49	17.89		
1974	387.9	364.3	398.2	376.6	464.5	467.8	575.5	543.6	496.8	465.2	402.0	429.4	3844.8	14.72	19.10		
1975	391.9	368.0	400.9	416.4	466.7	465.9	479.4	485.2	444.4	483.1	471.1	464.7	3760.5	14.62	22.06		
1976	476.1	419.0	429.8	497.9	456.8	494.0	580.7	659.5	572.2	582.7	536.9	594.3	4477.1	17.26	24.16		
1977	618.7	530.9	572.2	581.5	729.5	790.9	800.7	739.1	685.8	697.7	671.2	553.3	5668.2	21.84	28.72		
1978	608.9	552.2	614.6	670.0	679.9	706.0	817.9	729.1	824.6	787.8	697.1	681.6	5924.0	22.93	30.69		
1979	719.1	650.2	697.5	705.4	799.1	988.3	1044.3	1038.6	852.7	791.8	740.0	723.4	6978.2	26.71	36.38		
1980	711.9	680.5	756.7	754.1	932.9	945.1	1079.6	985.4	915.3	799.7	644.1	688.5	9893.8	27.11	39.58		
1981	665.4	597.9	694.6	818.1	800.9	961.4	1061.0	846.7	798.7	858.5	658.4	597.6	9359.2	25.64	44.10		
1982	560.6	540.1	576.3	460.6	639.7	708.6	750.4	699.4	650.7	626.3	617.7	601.0	7431.4	20.36	27.49		
1983	645.7	579.3	658.3	634.3	729.1	907.0	1023.0	1013.0	860.4	863.2	685.2	740.6	9339.1	25.59	42.63		
1984	724.7	662.1	688.6	757.3	892.9	1068.9	921.4	985.6	1035.8	1037.5	926.8	824.3	10525.9	28.84	42.68		
1985	962.5	858.7	966.3	986.8	1067.4	1054.5	1075.4	1000.0	1059.8	1075.9	898.0	998.5	12003.8	32.89	43.67		

COBB COUNTY - MARIETTA WATER AUTHORITY Water Storage Space Contract No. DA-01-076-CIVENG-64-116 PAGE 2

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL ANNUAL (MG)	AVE. ANNUAL (MGD)	PEAK DAY (MG)	Peak Days Date	YTD Days
				MONTHLY TOTALS IN MILLIONS OF GALLONS (MG)													
1986	1033.3	909.7	1116.7	1279.1	1284.0	1248.2	1238.9	1137.3	1070.6	911.5	900.2	956.0	13085.5	35.85	53.80		
1987	924.5	834.0	931.8	1031.6	1245.6	1208.0	1361.3	1268.5	1189.4	1296.5	1087.3	1028.4	13406.9	36.73	55.93		
1988	1113.0	958.2	1027.8	1074.0	1347.1	1502.7	1211.8	1097.6	1022.9	1021.3	904.5	943.9	13224.8	36.23	64.45		
1989	970.9	857.5	876.1	983.3	1155.2	1223.0	1077.5	1127.1	1009.7	1134.3	833.5	910.6	12158.5	33.31	59.65		
1990	885.2	930.8	1072.1	951.9	1046.0	1439.5	1389.4	1205.4	1255.0	1031.7	948.2	909.9	13065.0	35.79	64.71		
1991	930.3	1064.2	1073.1	977.3	1016.1	1171.9	1166.3	1117.9	1056.0	1093.4	955.5	871.7	12493.5	34.23	47.60		
1992	882.0	821.9	937.3	981.6	1123.7	1072.7	1197.5	1091.1	1012.5	1039.5	913.9	909.5	11983.2	32.83	60.90		YTD
1993	936.1	828.6	1246.3	1412.8	1268.4	1393.0	1663.2	1545.9	1295.5	1085.6	692.3	1072.1	14439.8	40.11	69.30		Days
1994	1166.2	817.4	926.6	1097.3	1232.6	1231.6	1117.6	1117.1	1113.9	981.2	918.2	956.7	12676.4	34.73	59.10		365
1995	979.0	873.4	1001.2	1181.3	1191.9	1246.2	1632.8	1582.5	1453.3	1385.9	1205.8	1232.4	14965.7	41.00	66.70	7/16	365
1996	1091.3	1036.5	958.9	970.6	1459.8	1571.6	1680.9	1636.7	1314.0	1296.9	1186.0	1203.6	15406.8	42.21	68.30	5/24	365
1997	1212.9	1184.5	1423.6	1147.3	1342.0	1189.9	1548.9	1455.0	1614.0	1349.0	1129.6	1126.5	15723.2	43.08	49.40		365
1998	1030.0	1074.5	1378.8	1206.8	1604.4	1660.4	1726.3	1644.8	1617.8	1492.0	1317.0	1288.3	17041.1	46.69	70.90	6/29	365
1999	1286.0	1147.3	1274.2	1497.7	1573.4	1566.9	1582.4	2056.6	1819.7	1606.8	1446.1	1499.7	18356.8	50.29	72.00	8/19	365
2000	1343.2	1127.2	1249.6	1322.0	1836.3	1802.2	1938.7	1793.0	1500.1	1643.8	1395.3	1345.4	18296.8	50.13	72.00	7/19,8/1	365
2001	1318.9	1170.5	1320.8	1392.0	1731.5	1500.2	1663.5	1724.4	1576.7	1562.3	1469.5	1340.3	17770.6	48.69	69.80	8/25	365
2002	1327.5	1173.0	1440.5	1396.8	1589.0	1719.1	1682.9	1929.0	1656.0	1532.5	1358.6	1428.5	18233.3	49.95	70.28	8/25	365
2003	1355.5	1158.0	1377.1	1530.3	1427.6	1600.2	1611.7	1653.4	1599.8	1387.6	1285.2	1123.0	17109.5	46.88	65.11	9/18	365
2004	1023.3	1006.8	1161.8	1356.9	1460.2	1438.0	1583.7	1706.7	1484.9	1412.6	1219.7	1281.8	16136.3	44.21	65.85	7/24	365
2005	1247.7	1142.6	1220.0	1272.3	1593.7	1467.2	1371.4	1429.0	1581.1	1500.3	1257.5	1115.9	16198.7	44.38	62.15	9/22	365
2006	1038.1	954.2	1172.2	1352.7	1712.5	1888.2	1933.4	1786.7	1500.5	1497.1	1210.5	1204.4	17250.4	47.26	71.71	6/11	365
2007	1253.7	1167.7	1414.0	1390.6	1740.3	1648.8	1416.1	2072.7	1801.7	1426.2	1361.4	1393.0	18086.2	49.55	80.08	8/23	365
2008	1248.8	1198.9	1285.0										3732.6	41.02	49.02	3/22	91

USGS Average Annual Allatoona Discharge Data

```
#
#
# US Geological Survey, Water Resources Data
# retrieved: 2013-07-03 14:05:41 EDT      (caww01)
#
# This file contains USGS Surface-Water Annual Statistics
#
# Note:The statistics generated from  this site are based on approved daily-
mean data and may not match those published by the USGS in official
publications.
# The user is responsible for assessment and use of statistics from this
site.
# For more details on why the statistics may not match, visit
http://waterdata.usgs.gov/nwis/?dv_statistics_disclaimer.
#
# ** No Incomplete data have been used for statistical calculation
#
# This file includes the following columns:
#
#
# agency_cd  agency code
# site_no    USGS site number
# parameter_cd
# dd_nu
# year_nu    Water year for value
# mean_va    annual-mean value.
#             if there is not complete record
#             for a year this field is blank
#
#
# Sites in this file include:
# USGS 02394000 ETOWAH RIVER AT ALLATOONA DAM, ABV CARTERSVILLE,GA
#
# Explanation of Parameter Code and dd_nu used in the Statistics Data
# parameter_cd  Parameter Name                                   dd_nu
        Location Name
# 00060         Discharge, cubic feet per second                 2
#
#
agency_cd       site_no parameter_cd    dd_nu   year_nu mean_va
5s      15s     5s      3n      4s      12n
USGS    02394000        00060   2       1950    1318
USGS    02394000        00060   2       1951    1259
USGS    02394000        00060   2       1952    2228
USGS    02394000        00060   2       1953    1579
USGS    02394000        00060   2       1954    1530
USGS    02394000        00060   2       1955    1192
USGS    02394000        00060   2       1956    1241
USGS    02394000        00060   2       1957    1476
USGS    02394000        00060   2       1958    1678
USGS    02394000        00060   2       1959    1402
USGS    02394000        00060   2       1960    1563
USGS    02394000        00060   2       1961    2088
USGS    02394000        00060   2       1962    2067
USGS    02394000        00060   2       1963    1952
```

USGS	02394000	00060	2	1964	3144
USGS	02394000	00060	2	1965	2133
USGS	02394000	00060	2	1966	1937
USGS	02394000	00060	2	1967	1894
USGS	02394000	00060	2	1968	2200
USGS	02394000	00060	2	1969	1780
USGS	02394000	00060	2	1970	1471
USGS	02394000	00060	2	1971	1858
USGS	02394000	00060	2	1972	2205
USGS	02394000	00060	2	1973	2794
USGS	02394000	00060	2	1974	2517
USGS	02394000	00060	2	1975	2271
USGS	02394000	00060	2	1976	2721
USGS	02394000	00060	2	1977	1943
USGS	02394000	00060	2	1978	2364
USGS	02394000	00060	2	1979	2413
USGS	02394000	00060	2	1980	2802
USGS	02394000	00060	2	1981	1226
USGS	02394000	00060	2	1982	1976
USGS	02394000	00060	2	1983	2379
USGS	02394000	00060	2	1984	2889
USGS	02394000	00060	2	1985	1295
USGS	02394000	00060	2	1986	946.3
USGS	02394000	00060	2	1987	1352
USGS	02394000	00060	2	1988	807.7
USGS	02394000	00060	2	1989	1569
USGS	02394000	00060	2	1990	3233
USGS	02394000	00060	2	1991	2080
USGS	02394000	00060	2	1992	1806
USGS	02394000	00060	2	1993	2446
USGS	02394000	00060	2	1994	1721
USGS	02394000	00060	2	1995	1545
USGS	02394000	00060	2	1996	2392
USGS	02394000	00060	2	1997	1778
USGS	02394000	00060	2	1998	2572
USGS	02394000	00060	2	1999	1016
USGS	02394000	00060	2	2000	1046
USGS	02394000	00060	2	2001	1332
USGS	02394000	00060	2	2002	956.7
USGS	02394000	00060	2	2003	2423
USGS	02394000	00060	2	2004	1517
USGS	02394000	00060	2	2005	2404
USGS	02394000	00060	2	2006	1262
USGS	02394000	00060	2	2007	1001
USGS	02394000	00060	2	2008	626.9
USGS	02394000	00060	2	2009	1340
USGS	02394000	00060	2	2010	2858
USGS	02394000	00060	2	2011	1151
USGS	02394000	00060	2	2012	869.4

USGS Average Annual Rome Flow Data

```
#
#
# US Geological Survey, Water Resources Data
# retrieved: 2013-07-03 14:07:18 EDT      (caww01)
#
# This file contains USGS Surface-Water Annual Statistics
#
# Note:The statistics generated from  this site are based on approved daily-
mean data and may not match those published by the USGS in official
publications.
# The user is responsible for assessment and use of statistics from this
site.
# For more details on why the statistics may not match, visit
http://waterdata.usgs.gov/nwis/?dv_statistics_disclaimer.
#
# ** No Incomplete data have been used for statistical calculation
#
# This file includes the following columns:
#
#
# agency_cd  agency code
# site_no    USGS site number
# parameter_cd
# dd_nu
# year_nu    Water year for value
# mean_va    annual-mean value.
#             if there is not complete record
#             for a year this field is blank
#
#
# Sites in this file include:
# USGS 02397000 COOSA RIVER NEAR ROME, GA
#
# Explanation of Parameter Code and dd_nu used in the Statistics Data
# parameter_cd  Parameter Name                                    dd_nu
        Location Name
# 00060         Discharge, cubic feet per second                  2
#
#
#
```

agency_cd	site_no	parameter_cd	dd_nu	year_nu	mean_va
5s	15s	5s	3n	4s	12n
USGS	02397000	00060	2	1950	6691
USGS	02397000	00060	2	1951	6092
USGS	02397000	00060	2	1952	7717
USGS	02397000	00060	2	1953	5912
USGS	02397000	00060	2	1954	5470
USGS	02397000	00060	2	1955	4710
USGS	02397000	00060	2	1956	5263
USGS	02397000	00060	2	1957	5664
USGS	02397000	00060	2	1958	6663
USGS	02397000	00060	2	1963	6846
USGS	02397000	00060	2	1964	9721
USGS	02397000	00060	2	1965	6576
USGS	02397000	00060	2	1966	5920
USGS	02397000	00060	2	1967	6059

USGS	02397000	00060	2	1968	7620
USGS	02397000	00060	2	1969	5451
USGS	02397000	00060	2	1970	4448
USGS	02397000	00060	2	1971	6370
USGS	02397000	00060	2	1972	6616
USGS	02397000	00060	2	1973	9509
USGS	02397000	00060	2	1974	8261
USGS	02397000	00060	2	1975	7116
USGS	02397000	00060	2	1976	8730
USGS	02397000	00060	2	1977	6851
USGS	02397000	00060	2	1978	7397
USGS	02397000	00060	2	1979	8744
USGS	02397000	00060	2	1980	9353
USGS	02397000	00060	2	1981	4007
USGS	02397000	00060	2	1982	7408
USGS	02397000	00060	2	1983	7925
USGS	02397000	00060	2	1984	9559
USGS	02397000	00060	2	1985	4040
USGS	02397000	00060	2	1986	2678
USGS	02397000	00060	2	1987	5032
USGS	02397000	00060	2	1988	2509
USGS	02397000	00060	2	1989	6925
USGS	02397000	00060	2	1990	11880
USGS	02397000	00060	2	1991	7127
USGS	02397000	00060	2	1992	6168
USGS	02397000	00060	2	1993	8023
USGS	02397000	00060	2	1994	6419
USGS	02397000	00060	2	1995	5591
USGS	02397000	00060	2	1996	8799
USGS	02397000	00060	2	1997	7769
USGS	02397000	00060	2	1998	8788
USGS	02397000	00060	2	1999	4790
USGS	02397000	00060	2	2000	3630
USGS	02397000	00060	2	2001	5146
USGS	02397000	00060	2	2002	4230
USGS	02397000	00060	2	2003	10070
USGS	02397000	00060	2	2004	5348
USGS	02397000	00060	2	2005	8184
USGS	02397000	00060	2	2006	3763
USGS	02397000	00060	2	2007	2570
USGS	02397000	00060	2	2008	2356
USGS	02397000	00060	2	2009	5642
USGS	02397000	00060	2	2010	8808
USGS	02397000	00060	2	2011	4576
USGS	02397000	00060	2	2012	3895

USGS Stats Below Buford Dam

```
#
#
# US Geological Survey, Water Resources Data
# retrieved: 2013-07-05 11:06:09 EDT      (sdww01)
#
# This file contains USGS Surface-Water Annual Statistics
#
# Note:The statistics generated from  this site are based on approved daily-
mean data and may not match those published by the USGS in official
publications.
# The user is responsible for assessment and use of statistics from this
site.
# For more details on why the statistics may not match, visit
http://waterdata.usgs.gov/nwis/?dv_statistics_disclaimer.
#
# ** No Incomplete data have been used for statistical calculation
#
# This file includes the following columns:
#
#
# agency_cd  agency code
# site_no    USGS site number
# parameter_cd
# dd_nu
# year_nu    Water year for value
# mean_va    annual-mean value.
#             if there is not complete record
#             for a year this field is blank
#
#
# Sites in this file include:
# USGS 02334430 CHATTAHOOCHEE RIVER AT BUFORD DAM, NEAR BUFORD, GA
#
# Explanation of Parameter Code and dd_nu used in the Statistics Data
# parameter_cd Parameter Name                                dd_nu   Location
Name
# 00060        Discharge, cubic feet per second              2
#
#
```

agency_cd	site_no	parameter_cd	dd_nu	year_nu	mean_va
5s	15s	5s	3n	4s	12n
USGS	02334430	00060	2	1956	855.4
USGS	02334430	00060	2	1957	855.7
USGS	02334430	00060	2	1958	910.9
USGS	02334430	00060	2	1959	1591
USGS	02334430	00060	2	1960	2397
USGS	02334430	00060	2	1961	2170
USGS	02334430	00060	2	1962	2497
USGS	02334430	00060	2	1963	2011
USGS	02334430	00060	2	1964	2840
USGS	02334430	00060	2	1965	1994
USGS	02334430	00060	2	1966	1791
USGS	02334430	00060	2	1967	2167
USGS	02334430	00060	2	1968	2884
USGS	02334430	00060	2	1969	2012

USGS	02334430	00060	2	1970	1975
USGS	02334430	00060	2	1971	1748
USGS	02334430	00060	2	1972	2601
USGS	02334430	00060	2	1973	2775
USGS	02334430	00060	2	1974	2307
USGS	02334430	00060	2	1975	2346
USGS	02334430	00060	2	1976	2887
USGS	02334430	00060	2	1977	2113
USGS	02334430	00060	2	1978	2310
USGS	02334430	00060	2	1979	2249
USGS	02334430	00060	2	1980	2904
USGS	02334430	00060	2	1981	1309
USGS	02334430	00060	2	1982	1269
USGS	02334430	00060	2	1983	2179
USGS	02334430	00060	2	1984	2414
USGS	02334430	00060	2	1985	1367
USGS	02334430	00060	2	1986	1242
USGS	02334430	00060	2	1987	1389
USGS	02334430	00060	2	1988	1152
USGS	02334430	00060	2	1989	1132
USGS	02334430	00060	2	1990	2960
USGS	02334430	00060	2	1991	1902
USGS	02334430	00060	2	1992	1818
USGS	02334430	00060	2	1993	3089
USGS	02334430	00060	2	1994	1596
USGS	02334430	00060	2	1995	2248
USGS	02334430	00060	2	1996	2665
USGS	02334430	00060	2	1997	1842
USGS	02334430	00060	2	1998	2660
USGS	02334430	00060	2	1999	1093
USGS	02334430	00060	2	2000	1209
USGS	02334430	00060	2	2001	880.6
USGS	02334430	00060	2	2002	756.9
USGS	02334430	00060	2	2003	2038
USGS	02334430	00060	2	2004	1568
USGS	02334430	00060	2	2005	2494
USGS	02334430	00060	2	2006	1633
USGS	02334430	00060	2	2007	1103
USGS	02334430	00060	2	2008	974.2
USGS	02334430	00060	2	2009	764.5
USGS	02334430	00060	2	2010	2498
USGS	02334430	00060	2	2011	1666
USGS	02334430	00060	2	2012	1093

July 12, 2013

USGS Stats at Atlanta

```
#
#
# US Geological Survey, Water Resources Data
# retrieved: 2013-07-05 11:26:16 EDT      (vaww01)
#
# This file contains USGS Surface-Water Annual Statistics
#
# Note:The statistics generated from  this site are based on approved daily-
mean data and may not match those published by the USGS in official
publications.
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site.
# For more details on why the statistics may not match, visit
http://waterdata.usgs.gov/nwis/?dv_statistics_disclaimer.
#
# ** No Incomplete data have been used for statistical calculation
#
# This file includes the following columns:
#
#
# agency_cd  agency code
# site_no    USGS site number
# parameter_cd
# dd_nu
# year_nu    Water year for value
# mean_va    annual-mean value.
#             if there is not complete record
#             for a year this field is blank
#
#
# Sites in this file include:
# USGS 02336000 CHATTAHOOCHEE RIVER AT ATLANTA, GA
#
# Explanation of Parameter Code and dd_nu used in the Statistics Data
# parameter_cd Parameter Name                                    dd_nu   Location
Name
# 00060        Discharge, cubic feet per second                  7
#
#
agency_cd       site_no parameter_cd    dd_nu   year_nu mean_va
5s      15s     5s      3n      4s      12n
USGS    02336000        00060   7       1956    1145
USGS    02336000        00060   7       1957    1135
USGS    02336000        00060   7       1958    1288
USGS    02336000        00060   7       1959    1898
USGS    02336000        00060   7       1960    2865
USGS    02336000        00060   7       1961    2807
USGS    02336000        00060   7       1962    3105
USGS    02336000        00060   7       1963    2614
USGS    02336000        00060   7       1964    3769
USGS    02336000        00060   7       1965    2903
USGS    02336000        00060   7       1966    2640
USGS    02336000        00060   7       1967    2559
USGS    02336000        00060   7       1968    3341
USGS    02336000        00060   7       1969    2331
```

USGS	02336000	00060	7	1970	2135
USGS	02336000	00060	7	1971	2182
USGS	02336000	00060	7	1972	3218
USGS	02336000	00060	7	1973	3638
USGS	02336000	00060	7	1974	3050
USGS	02336000	00060	7	1975	3091
USGS	02336000	00060	7	1976	3669
USGS	02336000	00060	7	1977	2619
USGS	02336000	00060	7	1978	2877
USGS	02336000	00060	7	1979	2822
USGS	02336000	00060	7	1980	3563
USGS	02336000	00060	7	1981	1626
USGS	02336000	00060	7	1982	1815
USGS	02336000	00060	7	1983	2829
USGS	02336000	00060	7	1984	3283
USGS	02336000	00060	7	1985	1856
USGS	02336000	00060	7	1986	1437
USGS	02336000	00060	7	1987	1809
USGS	02336000	00060	7	1988	1328
USGS	02336000	00060	7	1989	1553
USGS	02336000	00060	7	1990	3834
USGS	02336000	00060	7	1991	2483
USGS	02336000	00060	7	1992	2270
USGS	02336000	00060	7	1993	3791
USGS	02336000	00060	7	1994	2073
USGS	02336000	00060	7	1995	2658
USGS	02336000	00060	7	1996	3313
USGS	02336000	00060	7	1997	2435
USGS	02336000	00060	7	1998	3425
USGS	02336000	00060	7	1999	1359
USGS	02336000	00060	7	2000	1495
USGS	02336000	00060	7	2001	1409
USGS	02336000	00060	7	2002	1119
USGS	02336000	00060	7	2003	3068
USGS	02336000	00060	7	2004	2273
USGS	02336000	00060	7	2005	3459
USGS	02336000	00060	7	2006	2124
USGS	02336000	00060	7	2007	1436
USGS	02336000	00060	7	2008	1313
USGS	02336000	00060	7	2009	1384
USGS	02336000	00060	7	2010	3556
USGS	02336000	00060	7	2011	2161
USGS	02336000	00060	7	2012	1345

Snapshot from the ACF Factual Appendix – Gwinnett Annual Withdrawal Data

Table 1a - ***M&I Storage Allocation Necessary to Support Withdrawals Pursuant to the Holdover Contracts*** **(based on 1,087,600 and 947 yield method)**

	Withdrawals									Critical Yield 947 Formula	
YEAR	GWINNETT COUNTY, GA[1]		CITY OF CUMMING, GA[1]		CITY OF GAINESVILLE[1]		ATLANTA REGIONAL COMMISSION[1]		TOTAL CHALLENGED WITHDRAWALS (Max NTE or ACTUAL)	Total Challenged Storage* (based on MGD/947 x 1,087,600)	% of conservation storage of 1,087,600
	MGD	NTE MGD[3]	MGD	NTE MGD[3]	MGD	Reduced MGD[2]	MGD	NTE MGD[3]	MGD	Acre-Feet	
1977	6.79	40.00			8.03	0.03			40.03	45,954.77	4.23%
1978	13.49	40.00			9.60	1.60			41.60	47,757.14	4.39%
1979	14.34	40.00			10.78	2.78			42.78	49,111.79	4.52%
1980	18.35	40.00	1.88	2.50	10.41	2.41			44.91	51,557.05	4.74%
1981	19.36	40.00	1.67	2.50	10.94	2.94			45.44	52,165.49	4.80%
1982	20.71	40.00	2.03	2.50	10.45	2.45			44.95	51,602.97	4.74%
1983	24.44	40.00	2.40	2.50	10.31	2.31			44.81	51,442.25	4.73%
1984	28.14	40.00	2.44	2.50	10.12	2.12			44.62	51,224.13	4.71%
1985	32.93	40.00	2.73	5.00	10.96	2.96			47.96	55,058.47	5.06%
1986	38.61	40.00	3.22	5.00	10.34	2.34			47.34	54,346.71	5.00%
1987	42.33	42.33	3.29	5.00	10.81	12.00	241.52	50.00	109.33	125,511.74	11.54%
1988	43.14	53.00	3.47	10.00	10.71	12.00	235.18	50.00	125.00	143,501.02	13.19%
1989	41.59	53.00	3.38	10.00	10.53	12.00	231.35	50.00	125.00	143,501.02	13.19%
1990	48.26	53.00	4.38	10.00	11.30	12.00	241.32	50.00	125.00	143,501.02	13.19%
1991	47.24	53.00	4.41	10.00	11.63	12.00	237.82	50.00	125.00	143,501.02	13.19%
1992	50.58	53.00	4.33	10.00	12.22	12.00	239.93	50.00	125.00	143,501.02	13.19%
1993	56.43	56.43	5.17	10.00	11.90	12.00	256.26	50.00	128.43	147,438.69	13.56%
1994	58.49	58.49	5.45	10.00	12.93	12.00	269.57	50.00	130.49	149,803.59	13.77%
1995	66.15	66.15	7.05	10.00	13.54	12.00	279.51	50.00	138.15	158,597.33	14.58%
1996	68.59	68.59	8.86	10.00	13.80	12.00	277.15	50.00	140.59	161,398.47	14.84%
1997	66.85	66.85	10.04	10.04	14.08	12.00	278.41	50.00	138.89	159,446.86	14.66%
1998	80.77	80.77	10.51	10.51	15.84	12.00	307.68	50.00	153.28	175,966.70	16.18%
1999	88.38	88.38	12.99	12.99	16.98	12.00	321.37	50.00	163.37	187,550.10	17.24%
2000	85.33	85.33	11.60	11.60	17.85	12.00	318.40	50.00	158.93	182,452.94	16.78%
2001	85.77	85.77	12.37	12.37	17.05	12.00	307.97	50.00	160.14	183,842.03	16.90%
2002	83.80	83.80	11.05	11.05	17.29	12.00	221.79	50.00	156.85	180,065.08	16.56%
2003	71.28	71.28	11.95	11.95	16.83	12.00	289.40	50.00	145.23	166,725.23	15.33%
2004	84.97	84.97	11.27	11.27	17.91	12.00	302.79	50.00	158.24	181,660.82	16.70%
2005	84.74	84.74	10.53	10.53	17.89	12.00	303.47	50.00	157.27	180,547.25	16.60%
2006	92.91	92.91	18.79	18.79	18.99	12.00	315.78	50.00	173.70	199,409.02	18.33%

1 Data can be found in the record at ACF044236 (Gwinnett); ACF044239 (Cumming); ACF044241 (Gainesville); and ACF044244 (ARC).

2 Reduced withdrawals reflect the highest of actual total pumped or not-to-exceed amount (20 MGD) less 8 MGD related to the City of Gainesville's relocation contract. ACF014226.

3 Not-to-exceed ("NTE") amounts are equal to the higher of the contract amount or actual withdrawals. ARC

Exhibit B

2009 Letter to the Corps of Engineers

ONIS "TREY" GLENN, III
DIRECTOR

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BOB RILEY
GOVERNOR

September 9, 2009

Brigadier General Todd T. Semonite
South Atlantic Division Commander
USACE South Atlantic Division
60 Forsyth Street SW
Atlanta, Georgia 30303

RE: Water Quality Impacts to Alabama

Dear General Semonite:

The Alabama Department of Environmental Management (ADEM) is responsible for the protection and management of the quality of Alabama's surface waters. Recent data raises significant issues regarding water quality. By this letter, I am requesting action by your organization to protect water quality.

In 1996, the ADEM identified five of the six reservoirs on the Coosa River within the State of Alabama's borders as being impaired, namely Weiss Lake, Neely Henry Lake, Logan Martin Lake, Lay Lake and Mitchell Lake. In October 2008, ADEM and EPA Region 4 established Final Nutrient and Organic Enrichment/Dissolved Oxygen (OE/DO) Total Maximum Daily Loads (TMDLs) for the aforementioned reservoirs. The 2008 TMDLs were based on protection of water quality standards, namely dissolved oxygen and chlorophyll a criteria/targets specific to each of the five reservoirs. The TMDLs for total phosphorus (TP) were based on critical flow conditions during a specific period of record. More specifically, the Weiss Lake TMDL established TP reductions of 30% at the AL/GA Stateline for both the Chattooga and Coosa rivers.

Water quality modeling conducted as part of the TMDL process demonstrated that retention time is directly correlated to increased algal production in Weiss Lake as well as in the downstream reservoirs. Therefore, if flows in the Coosa River are decreased as a result of decreased releases from Carters and Allatoona reservoirs and/or other proposed withdrawals within the Coosa River Basin in Georgia, impacts to water quality are imminent. In addition, modeling demonstrates that if flows into Weiss Lake are reduced from the critical condition flows used in the TMDL, then allowable phosphorus loads from Georgia must be further reduced in order to maintain applicable water quality standards.

Based on water quality monitoring data collected by ADEM, there are documented cases of degraded water quality during past drought years in the Coosa and Tallapoosa system. These impacts resulted in reduced levels of dissolved oxygen and increased algal biomass. Such water quality conditions during drought conditions can cause considerable stress on aquatic communities in the river and reservoir systems. This can even include increased fish & mussel kills. The diminished water quality also creates greater challenges to industries and municipalities in meeting the conditions of their permits and complying with applicable water quality standards. Diminished water quality also has adverse impacts on water treatment costs for public water supply systems.

In addition, continued economic development within these river basins is dependent upon a reliable and adequate supply of clean water. Decreased water quantity and quality in the ACT restricts the ability of local communities to attract new businesses or expand existing businesses and affects the quality of life of Alabama citizens living, working and recreating along these rivers.

The Department is committed to protecting Alabama's water resources for the citizens of Alabama. With that said, we are deeply concerned that historical and current actions of the USACE-SAD with respect to reservoir operations have and will continue to directly impact waters of the State of Alabama. By this letter I am asking for the Corps to ensure that its operations of Lake Allatoona and Carters Lake include releases that will result in stream flows entering Alabama that are consistent with those flows used in setting the water quality standards described in this letter. For your convenience I have attached a graph depicting the Coosa River flow used in setting the water quality needs.

Lastly, the NPDES discharge permits issued to facilities in Alabama for discharges to the Chattahoochee River in the Phenix City area are based on a seven-day average river flow of 1,386 cfs. Since January of 2009 seven-day average flows from the West Point Dam have been less than 1,386 cfs on 68 occasions and 57 of those occurrences were between June 1 and August 31. Between June 16 and July 16 dissolved oxygen levels in the Chattahoochee River upstream of the MeadWestvaco facility declined to less than 5.0 mg/l on at least 9 days (see the attached chart). Each time the dissolved oxygen concentration declined to less than 5.0 mg/l the seven-day average flow released from the West Point Dam was less than 1,386 cfs. Therefore the COE should ensure that at least 1,386 cfs passes by Phenix City on a 7 day average to ensure compliance with Alabama's water quality standards.

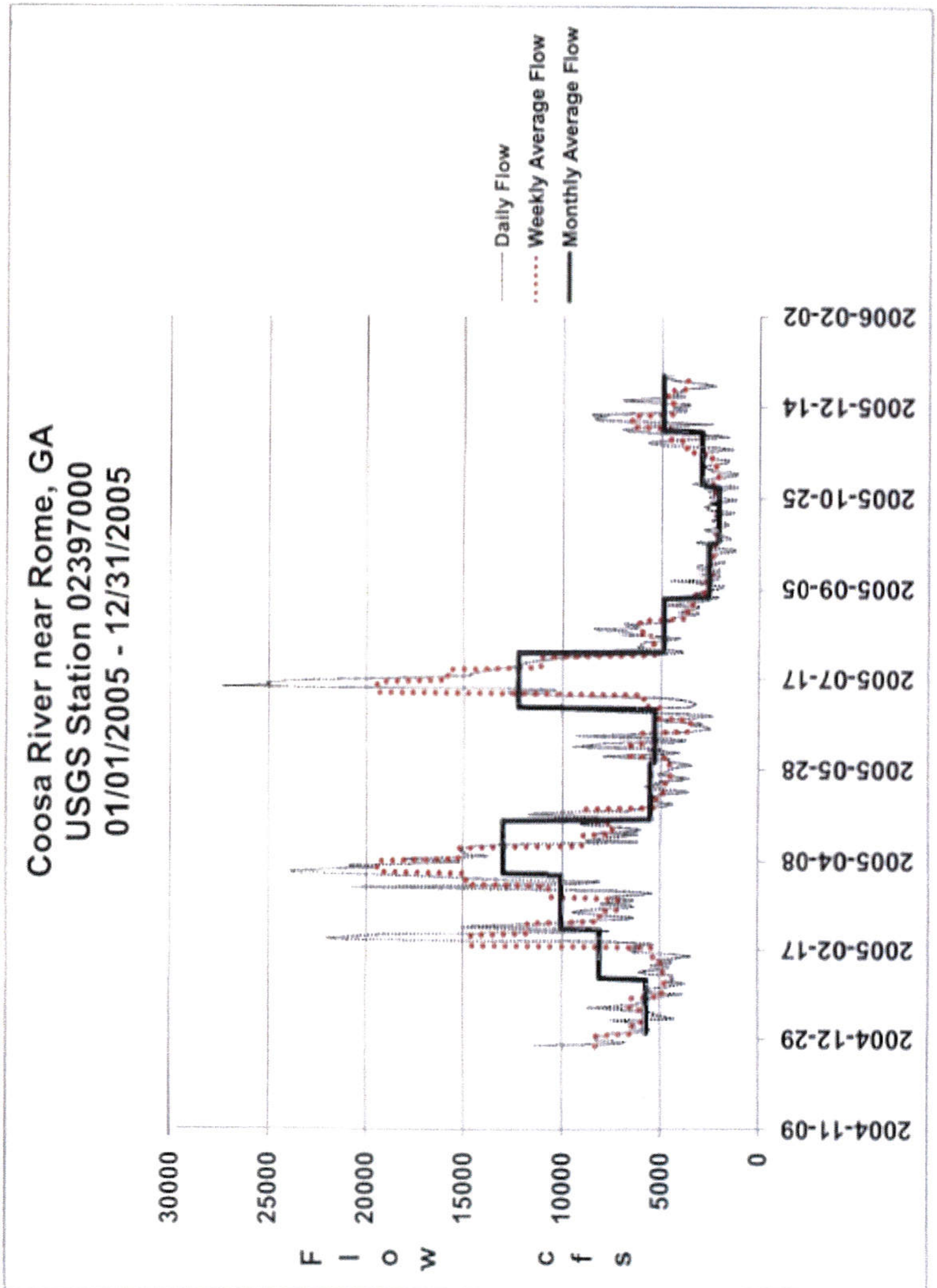
Sincerely,

Onis "Trey" Glenn, III
Director

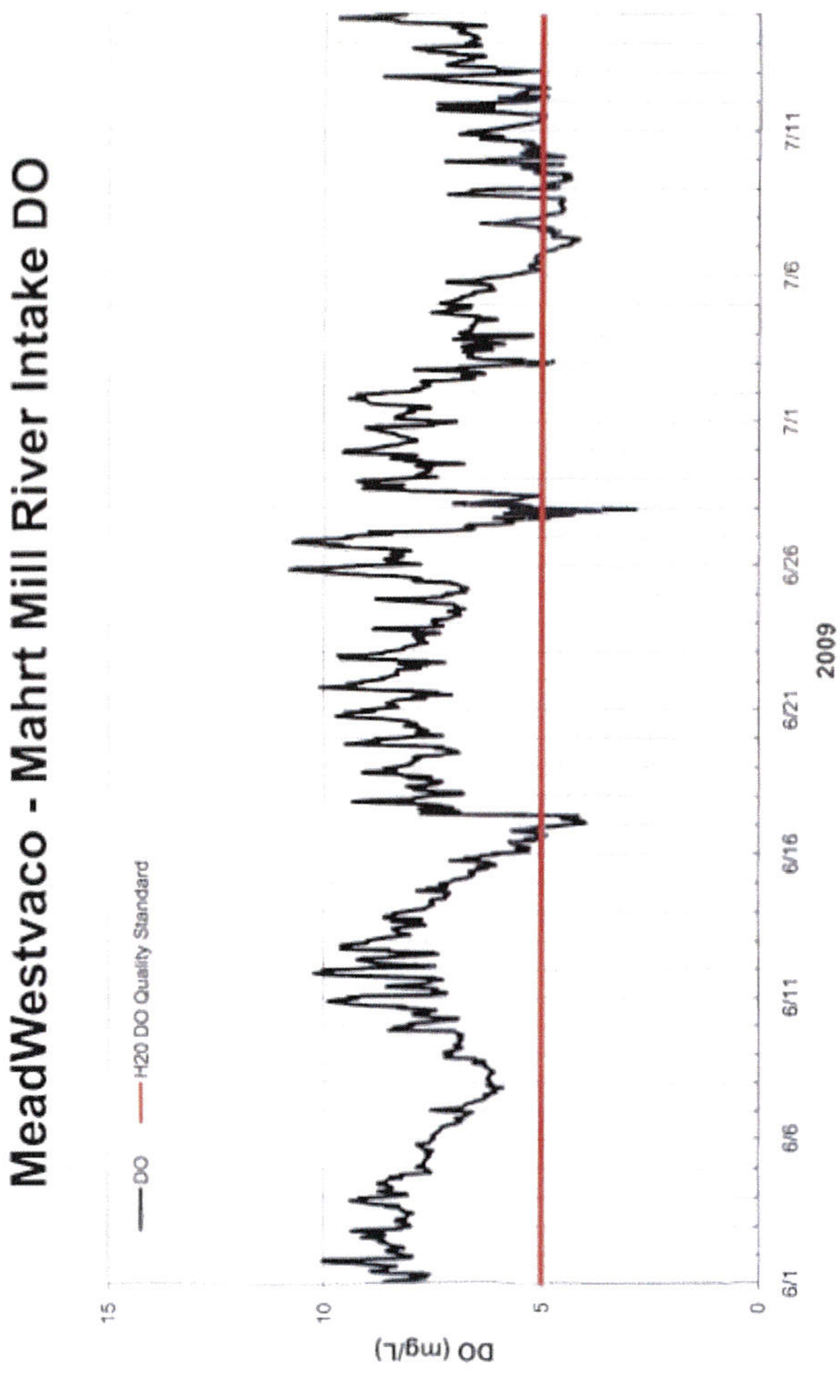
Attachments

cc: Stan Meiburg, US EPA Region 4

July 12, 2013



Coosa River near Rome, GA
USGS Station 02397000
01/01/2005 - 12/31/2005
Daily Flow
Weekly Average Flow
Monthly Average Flow
Flow cfs
0
5000
10000
15000
20000
25000
30000
2004-11-09
2004-12-29
2005-02-17
2005-04-08
2005-05-28
2005-07-17
2005-09-05
2005-10-25
2005-12-14
2006-02-02


MeadWestvaco - Mahrt Mill River Intake DO
DO
H20 DO Quality Standard
DO (mg/L)
15
10
5
0
6/1
6/6
6/11
6/16
6/21
6/26
7/1
7/6
7/11
2009