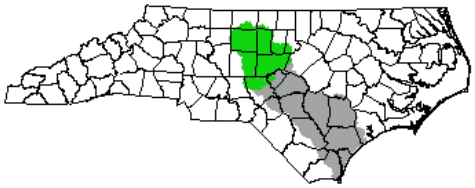
Memorandum of Agreement
Between
The State of North Carolina's Division of Water Quality
And
The Upper Cape Fear River Basin Association Permittees

Effective:
May 1, 2010 through April 30, 2015

Upper Cape Fear River Basin Association



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MEMORANDUM OF AGREEMENT

This Memorandum of Agreement (MOA) is made by and between the NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES'S DIVISION OF WATER QUALITY (DWQ), the NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) DISCHARGERS in the Upper Cape Fear River basin who have voluntarily executed this MOA (the UCFRBA PERMITTEES), and the UPPER CAPE FEAR RIVER BASIN ASSOCIATION (the UCFRBA), a non-profit corporation whose members include the UCFRBA PERMITTEES. The MOA includes all the attached tables and appendices. This MOA does not affect any influent or effluent monitoring requirement or any other NPDES permit requirements of individual permit holders with the one exception of performing upstream and downstream water quality monitoring. The UCFRBA PERMITTEES are exempted from instream monitoring as specified in their individual NPDES permits beginning on the effective date of this MOA and continuing for the duration of each permittee's participation in this MOA. Subsequent to the execution of this MOA, the DWQ will issue a letter to each UCFRBA PERMITTEE notifying the permittee that the instream monitoring requirements of its permit are not effective for as long as this MOA is in place and the permittee remains a party to this MOA.

The purpose of this MOA is to establish a formal agreement between the DWQ, the UCFRBA PERMITTEES, and the UCFRBA. This MOA authorizes the UCFRBA to act on behalf of the UCFRBA PERMITTEES as described herein. This MOA identifies the responsibilities of the UCFRBA PERMITTEES and the UCFRBA for surface water monitoring and reporting within the Upper Cape Fear River Basin. The water quality monitoring will occur at strategically located surface water sites to obtain information on water quality in the basin. Monitoring sites and parameters, listed in Appendix A, were established by the DWQ such that the instream monitoring is efficient, effective, and basin-oriented.

The UCFRBA will perform the monitoring activities described herein on behalf of UCFRBA PERMITTEES who are members in good standing of the UCFRBA. Each UCFRBA PERMITTEE agrees to remain a member in good standing of the UCFRBA. The UCFRBA will contract for the performance of the monitoring activities described herein and in Appendix B with a laboratory appropriately certified by the DWQ for the required laboratory and field analyses. Sample collection and field measurements will be made by the UCFRBA PERMITTEES, the UCFRBA, or a sub-contractor who will act as agent(s) of the UCFRBA PERMITTEES for the sole purpose of performing monitoring services required by this MOA. It will be the responsibility of the UCFRBA to coordinate the collection and analyses of the water quality monitoring data for the locations, parameters, and frequencies specified in Appendix A of this MOA. Sample collection, field measurement, and target reporting limits are specified in Appendix B of this MOA. Monthly and annual reporting requirements, including data format and data summaries are described in Appendix C of this MOA.

The UCFRBA shall submit the water quality data to the DWQ using the format documented in Appendix C of this MOA preferably in Microsoft® Excel 2000, a subsequent version, or the equivalent. The UCFRBA shall submit the water quality data to the DWQ within 90 days of the end of the month in which the sampling was performed. All data shall be archived by the UCFRBA for a period of 5 years. Each UCFRBA PERMITTEE has the right to review and

comment on work, data or reports prepared by any contractor on behalf of the UCFRBA PERMITTEES and to notify the DWQ of any objection or disagreement with any portion of the work, data, or reports. Unless such notice is made within thirty (30) days of submission of data or other reports to the DWQ, it shall be deemed to be waived and the work, data and reports submitted shall be deemed to be approved by the UCFRBA PERMITTEES. Failure by the UCFRBA PERMITTEES or the UCFRBA to collect or analyze the water quality data as described in this MOA, or to provide the data to the DWQ in the required format, may result in the revocation of this MOA by the DWQ and the return to individual upstream and downstream monitoring requirements, as specified in the individual NPDES permits of the UCFRBA PERMITTEES.

The UCFRBA shall submit an annual written report that summarizes the previous calendar year's sampling results and formally finalizes the water quality data. The report shall be submitted no later than April 30th each year that this MOA is in effect. The annual report shall include the NPDES permit number of each actively participating permit holder and a contact name, email address and phone number for each member. Appendix C of this MOA describes the required annual report content. Two copies, signed by the UCFRBA chairman, of these and any other reports required herein shall be submitted to the DWQ Coalition Coordinators at 1621 Mail Service Center, Raleigh, NC 27699-1621.

Stream sampling may be discontinued at such times as flow conditions in the receiving waters or extreme weather conditions will result in a substantial risk of injury or death to persons collecting samples. Sampling may also be discontinued when environmental conditions, such as a dry stream, prevent sample collection. In such cases, on each day that sampling is discontinued, the DWQ Coalition Coordinators shall be notified within one week of the discontinuance and written justification for the discontinuance shall be submitted with the monthly data submittal. This provision shall not be utilized to avoid the requirements of this MOA when performance of these requirements is attainable. When there is a sampling discontinuance pursuant to this provision, sampling shall be resumed at the first opportunity.

This MOA may be modified by the written consent of the DWQ and the UCFRBA. The DWQ or the UCFRBA may determine that it is necessary to request changes in monitoring frequency, parameters or sites to be sampled. Any such changes can only be made by a written amendment to this MOA agreed to by the DWQ and the UCFRBA. The amendment shall be signed by the UCFRBA chairman and by the DWQ. Such amendments may be entered into at any time.

The UCFRBA has historically monitored total metals at 33 sites as specified in the 2005 – 2010 MOA. However, routine ambient data collection for total recoverable metals has been suspended since April 3, 2007, via annual memorandums from the DWQ Director. For this reason, the UCFRBA has forgone metals monitoring and accumulated resources for future monitoring. No requirements for metals monitoring are included in this MOA, as the DWQ is currently in the process of reviewing metals water quality assessment techniques, evaluation criteria and relevant standards. However, the DWQ expects to conclude the review within the life cycle of this MOA. At such time, or when the DWQ Director mandates, the UCFRBA is expected to resume monitoring at a level of effort similar to that in the 2005 – 2010 MOA. Within 60 days of the release of relevant documentation, the UCFRBA will finalize an amendment to the MOA, which includes metals monitoring.

The following additional dischargers may enter into this MOA subsequent to the effective date hereof:

1) Dischargers who receive a NPDES permit within the Upper Cape Fear River Basin, or
2) Dischargers who have NPDES permits within the Upper Cape Fear River Basin but are not parties to this Agreement.

The addition of such dischargers to this MOA may be made only with the consent of the DWQ and the UCFRBA and shall require a written amendment to this MOA signed by the UCFRBA chairman, by the DWQ, and by an authorized representative of any such discharger who wishes to enter into the MOA. The DWQ will not unreasonably withhold consent to the addition of a discharger to the MOA. The DWQ will consider modification of the existing monitoring program described in this MOA for the addition of a discharger to the MOA. Such amendments may be made at any time that this MOA is in effect. The UCFRBA PERMITTEES included in this MOA are listed in Table 1.

This MOA shall be effective until April 30, 2015 unless extended by the consent of both the DWQ and the UCFRBA. Upon sixty (60) days written notice, the DWQ or the UCFRBA may terminate this MOA for any reason. Upon termination of this MOA, the monitoring requirements contained in the individual NPDES permit of each UCFRBA PERMITTEE shall become effective immediately. An individual permit holder may terminate and cancel its participation in this MOA by providing one-hundred eighty (180) days written notice to the UCFRBA, and sixty (60) days written notice to the DWQ Coalition Coordinators, the appropriate DWQ Regional Office, and the DWQ NPDES Unit. The monitoring requirements contained in the individual NPDES permit shall become effective immediately upon such cancellation or termination. In the event a permit holder terminates or cancels its participation in this MOA or its membership in the UCFRBA is terminated for any reason, the UCFRBA may request that DWQ review the monitoring plan described in this MOA for a possible reduction in sampling effort or requirements.

Should any part of this Agreement be declared invalid or unenforceable by a court of competent jurisdiction, invalidation of the affected portion shall not invalidate the remaining portions of the Agreement and they shall remain in full force and effect.

IN WITNESS WHEREOF, the parties have caused the execution of this instrument by authority duly given, to be effective as of the date executed by the DWQ.

DIVISION OF WATER QUALITY

By: Signature received 4/26/10
Coleen Sullins
Director
Division of Water Quality

Date: _____

UPPER CAPE FEAR RIVER BASIN ASSOCIATION

By: Signature received 3/26/10
Terry Houk
Chairman
Upper Cape Fear Basin Association

Date: _____

Table 1
UCFRBA PERMITTEES

NPDES Permit Number	Upper Cape Fear River Basin Association Permittees Ownership and Facility	Authorized Representative and Title	County	Region	8 Digit HUC
NC0000892	Arclin Arclin WWTP	Mr. Art Schermbeck HSE Coordinator	Chatham	RRO	030607
NC0001899	Performance Fibers, Inc. Performance Fibers WWTP	Mr. Charles E. Powell, Jr. Environmental Leader & Industrial Hygiene	Chatham	RRO	030607
NC0020354	Town of Pittsboro Pittsboro WWTP	Mr. William Terry Town Manager	Chatham	RRO	030604
NC0021211	City of Graham Graham WWTP	Mr. Victor Quick Utilities Director	Alamance	WSRO	030602
NC0021474	City of Mebane Mebane WWTP	Mr. Robert Wilson City Manager	Alamance	WSRO	030602
NC0023868	City of Burlington Burlington East WWTP	Mr. Bob Patterson Water Resources Director	Alamance	WSRO	030602
NC0023876	City of Burlington Burlington South WWTP	Mr. Bob Patterson Water Resources Director	Alamance	WSRO	030603
NC0024147	City of Sanford Sanford WWTP	Mr. T. Jay Grainger WWTP Superintendent	Lee	RRO	030611
NC0024210	City of High Point East Side WWTP	Mr. Terry Houk Asst. Director of Public Services	Guilford	WSRO	030608
NC0024325	City of Greensboro North Buffalo Creek WWTP	Mr. Allan E. Williams Water Resources Director	Guilford	WSRO	030602
NC0024881	City of Reidsville Reidsville WWTP	Mr. D. Kelly Almond City Manager	Rockingham	WSRO	030601
NC0025241	Orange Water and Sewer Authority Mason Farm WWTP	Mr. Ed Kerwin Executive Director	Orange	RRO	030606
NC0025445	City of Randleman Randleman WWTP	Mr. Tony Sears City Manager	Randolph	WSRO	030608
NC0026051	Durham County Triangle WWTP	Mr. Joseph Pearce Utility Division Manager	Durham	RRO	030605
NC0026123	City of Asheboro Asheboro WWTP	Mr. Michael Rhoney Water Resources Director	Randolph	WSRO	030609
NC0026441	Town of Siler City Siler City WWTP	Mr. Joel J. Brower Town Manager	Chatham	RRO	030612
NC0026565	City of Ramseur Ramseur WWTP	Mr. Jim McIntosh Public Works Director	Randolph	WSRO	030609
NC0047384	City of Greensboro TZ Osborne WWTP	Mr. Alan E. Williams Water Resources Director	Guilford	WSRO	030602
NC0047597	City of Durham South Durham WRF	Mr. Robert Dodson Superintendent	Durham	RRO	030605
NC0058548	Town of Star Star WWTP	Ms. Susan P. Eggleston Mayor	Montgomer y	FRO	030610
NC0072575	Gold Kist, Inc. Gold Kist WWTP	Mr. Bruce Morgan Water & Wastewater Treatment Manager	Lee	RRO	030611
NC0083852	Gold Kist, Inc Gold Kist WTP	Mr. Bruce Morgan Water & Wastewater Treatment Manager	Lee	RRO	030611

UCFRBA PERMITEE SIGNATURES

NPDES Permit Number	Permittee	Signature	Date
NC0000892	Arclin Arclin WWTP	Signature received 4/9/10 Mr. Art Schermbeck HSE Coordinator	
NC0001899	Performance Fibers, Inc. Performance Fibers Moncure WWTP	Signature received 4/5/10 Mr. Charles E. Powell, Jr Environmental Leader & Industrial Hygiene	
NC0020354	Town of Pittsboro Pittsboro WWTP	Signature received 4/12/10 Mr. William Terry Town Manager	
NC0021211	City of Graham Graham WWTP	Signature received 3/26/10 Mr. Victor Quick Utilities Director	
NC0021474	City of Mebane Mebane WWTP	Signature received 3/24/10 Mr. Robert Wilson City Manager	
NC0023868	City of Burlington Burlington East WWTP	Signature received 4/5/10 Mr. Bob Patterson Water Resources Director	
NC0023876	City of Burlington Burlington South WWTP	Signature received 4/5/10 Mr. Bob Patterson Water Resources Director	
NC0024147	City of Sanford Sanford WWTP	Signature received 4/6/10 Mr. T. Jay Grainger WWTP Superintendent	
NC0024210	City of High Point Eastside WWTP	Signature received 3/26/10 Mr. Terry Houk Asst. Director of Public Services	
NC0024325	City of Greensboro North Buffalo Creek WWTP	Signature received 4/6/10 Mr. Allan E. Williams Water Resources Director	

UCFRBA PERMITEE SIGNATURES

NPDES Permit Number	Permittee	Signature	Date
NC0024881	City of Reidsville Reidsville WWTP	Signature received 4/15/10 Mr. D. Kelly Almond City Manager	
NC0025241	Orange Water and Sewer Mason Farm WWTP	Signature received 3/26/10 Mr. Ed Kerwin Executive Director	
NC0025445	City of Randleman Randleman WWTP	Signature received 4/12/10 Mr. Tony Sears City Manager	
NC0026051	Durham County Triangle WWTP	Signature received 3/26/10 Mr. Joseph Pearce Utility Division Manager	
NC0026123	City of Asheboro Asheboro WWTP	Signature received 3/31/10 Mr. Michael Rhoney Water Resources Director	
NC0026441	Town of Siler City Siler City WWTP	Signature received 3/23/10 Mr. Joel J. Brower Town Manager	
NC0026565	City of Ramseur Ramseur WWTP	Signature received 4/5/10 Mr. Jim McIntosh Public Works Director	
NC0047384	City of Greensboro TZ Osborne WWTP	Signature received 4/6/10 Mr. Allan E. Williams Water Resources Director	
NC0047597	City of Durham South Durham WRF	Signature received 3/29/10 Mr. Robert Dodson Superintendent	
NC0058548	Town of Star Star WWTP	Signature received 4/6/10 Ms. Susan P. Eggleston Mayor	

UCFRBA PERMITEE SIGNATURES

NPDES Permit Number	Permittee	Signature	Date
NC0072575	Gold Kist, Inc. Gold Kist WWTP	Signature received 3/29/10 Mr. Bruce Morgan Water & Wastewater Treatment Manager	
NC0083852	Gold Kist, Inc. Gold Kist WTP	Signature received 3/29/10 Mr. Bruce Morgan Water & Wastewater Treatment Manager	

APPENDIX A

UCFRBA MONITORING PROGRAM

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Table A-1
UCFRBA Sampling Stations, Parameters and Sampling Frequency

DWQ Station Number	Location	Station Comments	Latitude (dd.ddddd)	Longitude (dd.ddddd)	County	Stream Class	Stream Index	Sub-Basin	[1]Field Parameters	Fecal Coliform	Turbidity	TSS	[2]Nutrients	[3]Metals
B0050000	Haw Riv at US 29 Business nr Benaja	ups Reidsville WWTP	36.2652	-79.6523	ROCKINGHAM	WS-V, NSW	16-(1)	03-06-01	M + 2SM	M	M	M	M	
B0070010	Troublesome Crk at US 29 Bus nr Reidsville	major tributary, nps inputs	36.2768	-79.6499	ROCKINGHAM	WS-V, NSW	16-6-(3)	03-06-01	M	M	M	M	M	
B0170000	Haw Riv at SR 2620/2614 (High Rock Rd) nr Williamsburg	below Reidsville WWTP	36.2514	-79.5647	ROCKINGHAM	C, NSW	16-(1)	03-06-01	M + 2SM	M	M	M	M	
B0400000	Reedy Fork at SR 2719 (High Rock Rd) nr Monticello	model verification	36.1778	-79.6177	GUILFORD	WS-V, NSW	16-11-(9)	03-06-02	M	M	M	M	M	
B0480050	N Buffalo Crk at N Buffalo Crk WWTP Influent Conduit Pier at Greensboro	ups N. Buffalo WWTP	36.1074	-79.7502	GUILFORD	WS-V, NSW	16-11-14-1	03-06-02	M + 2SM	M	M	M	M	
B0540050	N Buffalo Crk at SR 2770 (Huffine Mill Rd) nr McLeansville	dns N. Buffalo WWTP	36.1299	-79.6626	GUILFORD	WS-V, NSW	16-11-14-1	03-06-02	M + 2SM	M	M	M	M	
B0670000	S Buffalo Crk at SR 3000 (McConnell Rd) nr Greensboro	USGS gage, ups TZ Osborne WWTP	36.0598	-79.7256	GUILFORD	WS-V, NSW	16-11-14-2	03-06-02	M + 2SM	M	M	M	M	
B1020000	Haw River at SR 1700 (Lower Hopedale Rd.) at Hopedale	ups Burlington East WWTP	36.1247	-79.4083	ALAMANCE	WS-V, NSW	16-(1)	03-06-02	M + 2SM	M	M	M	M	
B1200000	Haw Riv at NC 54 nr Graham	Between Burlington East and Graham	36.0481	-79.3667	ALAMANCE	WS-V, NSW	16-(1)	03-06-02	M + 2SM	M	M	M	M	
B1350000	Moadams Crk at Corrigdor Rd ups of Discharge nr Mebane	ups Mebane WWTP	36.0885	-79.2844	ALAMANCE	WS-V, NSW	16-18-7	03-06-02	M + 2SM	M	M	M		
B1380000	Moadams Crk at SR 1940 (Gibson Rd) nr Florence Town	dns Mebane WWTP	36.0891	-79.3074	ALAMANCE	WS-V, NSW	16-18-7	03-06-02	M + 2SM	M	M	M	M	
B1440000	Haw Riv at SR 2158 (Swepsonville Rd) nr Swepsonville	dns Graham WWTP	36.0256	-79.3682	ALAMANCE	WS-V, NSW	16-(1)	03-06-02	M + 2SM	M	M	M	M	
B1940000	Big Alamance Crk at NC 87 nr Swepsonville	ups Burlington S. WWTP	36.0242	-79.3943	ALAMANCE	WS-V, NSW	16-19-(4.5)	03-06-02	M + 2SM	M	M	M	M	
B2000000	Haw Riv at SR 1005 nr Saxpahaw	Rural area, dns Cane Creek	35.8953	-79.2585	ALAMANCE	C, NSW	16-(1)	03-06-04	M	M	M	M	M	
B2100000	Haw Riv at SR 1713 nr Bynum	USGS Gage, ups Jordan L., DWQ ambient stn	35.7716	-79.1449	CHATHAM	WS-IV, NSW	16-(28.5)	03-06-04	M	M	M	M	M	
B3020000	New Hope Creek at NC 54 nr Durham	ups S. Durham WRF, below waterfowl imp.	35.9167	-78.9704	DURHAM	WS-IV, NSW	16-41-1-(11.5)	03-06-05	M + 2SM	M	M	M	M	
B3025000	Third Fork Crk at NC 54 nr Durham	Urban runoff	35.9187	-78.9548	DURHAM	WS-IV, NSW	16-41-1-12-(2)	03-06-05	M	M	M	M	M	
B3040000	New Hope Crk at SR 1107 (Stagecoach Rd) nr Blands	Jordan Lake TMDL, USGS gage	35.8847	-78.9656	DURHAM	WS-IV, NSW	16-41-1-(11.5)	03-06-05	M + 2SM	M	M	M	M	

DWQ Station Number	Location	Station Comments	Latitude (dd.ddddd)	Longitude (dd.ddddd)	County	Stream Class	Stream Index	Sub-Basin	[1]Field Parameters	Fecal Coliform	Turbidity	TSS	[2]Nutrients	[3]Metals
B3300000	Northeast Crk at SR 1102 (Sedwick Rd) nr RTP	ups Durham Co. RTP WWTP	35.887	-78.8994	DURHAM	WS-IV, NSW	16-41-1-17-(0.7)	03-06-05	M + 2SM	M	M	M	M	
B3670000	Northeast Crk at SR 1731 (O Kelly Church Rd) nr Durham	dns Durham Co. RTP WWTP, Jordan Lake TMDL	35.8555	-78.9397	CHATHAM	WS-IV, NSW	16-41-1-17-(0.7)	03-06-05	M + 2SM	M	M	M	M	
B3899180	Morgan Crk at Mason Farm WWTP Entrance at Chapel Hill	ups OWASA	35.8987	-79.0263	ORANGE	WS-IV, NSW	16-41-2-(5.5)	03-06-06	M + 2SM	M	M	M	M	
B3900000	Morgan Crk at SR 1726 (Old Farrington Rd) nr Farrington	dns OWASA, DWQ ambient stn	35.8612	-79.01	CHATHAM	WS-IV, NSW	16-41-2-(5.5)	03-06-06	M + 2SM	M	M	M	M	
B4080000	Haw Riv at SR 1011 (Old US 1) nr Haywood	dns Jordan Lake and Performance Fibers, ups Arclin (Dynea)	35.6164	-79.0569	CHATHAM	WS-IV	16-42	03-06-04	M + 2SM	M	M	M	M	
B4350000	Deep Riv at SR 1113 (Kivett Dr) nr Hayworth Spring	ups Richland Creek	35.9594	-79.9061	GUILFORD	WS-IV, CA*	17-(4)	03-06-08	M + 2SM	M	M	M	M	
B4380000	Richland Crk at SR 1154 (Kersey Valley Rd) nr Highpoint	ups High Point Eastside WWTP, Fecal Coliform TMDL	35.941	-79.9322	GUILFORD	WS-IV, CA*	17-7-(4)	03-06-08	M + 2SM	M	M	M	M	
B4621000	Muddy Crk at SR 1917 (Suits Rd) nr Glenola	Fecal Coliform TMDL	35.89579	-79.91951	RANDOLPH	WS-IV*	17-9-(1)	03-06-08	M	M	M	M	M	
B4770500	Deep Riv at Bus 220 (Main St) at Randleman	ups Randleman WWTP, ups Hasketts Creek	35.8233	-79.8033	RANDOLPH	C	17-(10.5)	03-06-08	M + 2SM	M	M	M	M	
B4800000	Deep Riv at SR 2122/2128 (Worthville Rd) at Worthville	dns Randleman WWTP, dns Worthville dam	35.8021	-79.7771	RANDOLPH	C	17-(10.5)	03-06-09	M + 2SM	M	M	M	M	
B4870000	Hasketts Crk at Asheboro WWTP Bridge nr Asheboro	ups Asheboro WWTP	35.7649	-79.7864	RANDOLPH	C	17-12	03-06-09	M	M	M	M	M	
B4920000	Deep Riv at SR 2261 (Old Liberty Rd) nr Central Falls	dns Asheboro WWTP, below Hasketts CreeK	35.7642	-79.7734	RANDOLPH	C	17-(10.5)	03-06-09	M + 2SM	M	M	M	M	
B5070000	Deep Riv at SR 2615 (Brooklyn Ave) at Ramseur	ups Ramseur WWTP,	35.7302	-79.6558	RANDOLPH	C	17-(10.5)	03-06-09	M + 2SM	M	M	M	M	
B5100000	Deep Riv at SR 2628 (Hinshaw Town Rd) nr Parks Crossroads	dns Ramseur WWTP	35.6724	-79.6274	RANDOLPH	C	17-(10.5)	03-06-09	M + 2SM	M	M	M	M	
B5390800	Cotton Crk at SR 1372 (Auman Rd) nr Star	dns Starr WWTP	35.3782	-79.7551	MONTGOMERY	WS-III	17-26-5-3	03-06-10	M + 2SM	M	M	M	M	
B5685000	Deep Riv at Deep River Park Bridge nr Cumnock	ups Golden Poultry	35.5704	-79.2411	CHATHAM	C	17-(38.7)	03-06-11	M + 2SM	M	M	M	M	
B5820000	Deep Riv at US 15 and 501 nr Sanford	dns Sanford WWTP	35.5782	-79.1942	LEE	C	17-(38.7)	03-06-11	M + 2SM	M	M	M	M	
B5950000	Rocky Riv at US 64 nr Siler City	dns reservoir, ups Loves Creek	35.7351	-79.4233	CHATHAM	C	17-(43)-8	03-06-12	M + 2SM	M	M	M	M	
B5890000	Loves Crk at Water Treatment Plant Rd at Siler City	ups Siler City WWTP	35.7298	-79.4289	CHATHAM	C	17-(43)-10	03-06-12	M + 2SM	M	M		M	

DWQ Station Number	Location	Station Comments	Latitude (dd.ddddd)	Longitude (dd.ddddd)	County	Stream Class	Stream Index	Sub-Basin	[1]Field Parameters	Fecal Coliform	Turbidity	TSS	[2]Nutrients	[3]Metals
B5920000	Loves Creek at Progress Blvd at Siler City	dns Siler City WWTP	35.7322	-79.4246	CHATHAM	C	17-(43)-10	03-06-12	M + 2SM	M	M		M	
B5980000	Rocky Riv at SR 2170 (Rives Chapel Rd) nr Siler City	dns Loves Creek	35.6985	-79.3756	CHATHAM	C	17-(43)-8	03-06-12	M + 2SM	M	M	M	M	
B6040300	Deep Riv at SR 1011 (Old US 1) nr Moncure	ups of confluence with Haw River, DWQ ambient stn	35.6176	-79.0912	CHATHAM	WS-IV	17-(43.5)	03-06-11	M	M	M	M	M	

[1] Field Parameters include Temperature, Dissolved Oxygen, pH, and Conductivity

[2] Nutrients include Ammonia as N (NH_3), Total Kjeldahl Nitrogen (TKN), Nitrate/Nitrite as N (NO_2/NO_3), and Total Phosphorus as P

[3] No requirements for metals monitoring are included in this MOA, as the DWQ is currently in the process of reviewing metals water quality assessment techniques, evaluation criteria and relevant standards. However, the DWQ expects to conclude the review within the life cycle of this MOA. At such time, or when the DWQ Director mandates, the UCFRBA is expected to resume monitoring at a level of effort similar to that in the 2005-2010 MOA. Within 60 days of the release of relevant documentation, the UCFRBA will finalize an amendment to the MOA, which includes metals monitoring.

M=Monthly M+2SM=Monthly with Twice Monthly Summer Sampling May, June, July, August and September. Samples are to be collected at least 10-days apart except when extenuating circumstances arise.

Q=Quarterly March, June, September, and December ups=upstream dns=downstream

APPENDIX B

SAMPLE COLLECTION AND ANALYSIS

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Sample Collection Procedures

Sample collection shall be performed by trained personnel employed with NC DWQ certified laboratories in accordance with the DWQ NPDES Discharge Monitoring Coalition Program Field Monitoring Guidance Document (May 2008) and subsequent documents. The Field Monitoring Guidance Document can be found on the web at: http://portal.ncdenr.org/web/wq/ess/eco/coalition. Alternate collection procedures require the approval of the DWQ coalition coordinators prior to use.

Laboratory Analysis

All laboratory analyses shall be performed at a DWQ certified laboratory using approved methods as prescribed by section 40 of the Code of Federal Regulations part 136 (40CFR136) or other methods certified by the DWQ Laboratory Certification Branch (http://portal.ncdenr.org/web/wq/lab/cert/nonfield/methods) or the Director of DWQ. 40CFR136 can be accessed on the web at http://portal.ncdenr.org/web/wq/lab/cert/nonfield/rules.

Reporting levels will be at least as stringent as the reporting levels used by the DWQ Laboratory. For guidance purposes Table B-1 lists target reporting levels for each parameter based on the reporting levels of the DWQ Laboratory. The lowest possible analytical limits for all the parameters should be pursued.

TABLE B-1
DWQ Laboratory Reporting Limits

Parameters	Target Reporting Level	Comments
Water Temperature		Resolution to 0.1 degree Celsius
Dissolved Oxygen		Report results to the nearest 0.1 mg/L.
pH		Meters should be calibrated to measure a pH range of at least 4.01 to 9.18. Report results to the nearest 0.1 pH units.
Specific Conductivity		Report results to the nearest whole µmho/cm at 25 ºC.
Turbidity	1.0 NTU	
TSS	6.2 mg/L	
Fecal Coliform	1 colony/100 mL	At least 3 dilutions should be used to achieve optimum colony counts per membrane filter of 20-60 colonies.
Chlorophyll *a*	1 µg/L	Report Chlorophyll *a* values free from pheophytin and other chlorophyll pigments. Analysis by HPLC is not approved by DWQ.
Ammonia (NH3 as N)	0.02 mg/L	Address distillation requirement. See 40CFR136 Table II footnote.
Nitrate + Nitrite as N	0.02 mg/L	
Total Kjeldahl Nitrogen as N	0.20 mg/L	
Total Phosphorus as P	0.02 mg/L	
Al*		
As*		
Cd*		
Cr*		
Cu*		
Fe*		
Pb*		
Mn*		
Hg*		
Ni*		
Zn*		

* No requirements for metals monitoring are included in this MOA, as the DWQ is currently in the process of reviewing metals water quality assessment techniques, evaluation criteria and relevant standards. However, the DWQ expects to conclude the review within the life cycle of this MOA. At such time, or when the DWQ Director mandates, the UCFRBA is expected to resume monitoring at a level of effort similar to that in the 2005 – 2010 MOA. Within 60 days of the release of relevant documentation, the UCFRBA will finalize an amendment to the MOA, which includes metals monitoring.

Data Qualification Codes

When reporting data, the DWQ's data qualifier codes must be used to provide additional information regarding data quality and interpretation. The current set of qualifier codes to be used is provided in Table B-2. Review the data remark codes at least annually and utilize the most current set, as codes are subject to change. A copy of this table can be found at http://portal.ncdenr.org/web/wq/lab/qa.

Table B-2
Data Remark Codes for Use with Coalition Data

Data Remark Code	Code Definition
A	Value reported is the mean (average) of two or more determinations. This code is to be used if the results of two or more discrete and separate samples are averaged. These samples shall have been processed and analyzed independently (e.g. field duplicates, different dilutions of the same sample). This code is not required for BOD or coliform reporting since averaging multiple dilutions for these parameters is fundamental to those methods.
B	Results are based upon colony counts outside the acceptable range and should be used with caution. This code applies to microbiological tests and specifically to membrane filter (MF) colony counts. It is to be used if less than 100% sample was analyzed and the colony count is generated from a plate in which the number of coliform colonies exceeds the ideal ranges indicated by the method. These ideal ranges are defined in the method as: *Fecal coliform bacteria: 20-60 colonies* *Total coliform bacteria: 20-80 colonies* B1. Countable membranes with less than 20 colonies. Reported value is estimated or is a total of the counts on all filters reported per 100 mL. B2. Counts from all filters were zero. The value reported is based on the number of colonies per 100 mL that would have been reported if there had been one colony on the filter representing the largest filtration volume (reported as a less than "<" value). B3. Countable membranes with more than 60 or 80 colonies. The value reported is calculated using the count from the smallest volume filtered and reported as a greater than ">" value. B4. Filters have counts of both >60 or 80 and <20. Reported value is a total of the counts from all countable filters reported per 100 mL. B5. Too many colonies were present; too numerous to count (TNTC). TNTC is generally defined as > 150 colonies. The numeric value represents the maximum number of counts typically accepted on a filter membrane (60 for fecal and 80 for total), multiplied by 100 and then divided by the smallest filtration volume analyzed. This number is reported as a greater than value. B6. Estimated Value. Blank contamination evident. B7. Many non-coliform colonies or interfering non-coliform growths are present. In this competitive situation, the reported coliform value may under-represent actual coliform density.
C	Total residual chlorine was present in sample upon receipt in the laboratory; value is **estimated**. Generally applies to cyanide, phenol, NH_3, TKN, coliform, and organics)

Data Remark Code	Code Definition
G	A single quality control failure occurred during biochemical oxygen demand (BOD) analysis. The sample results should be used with caution. G1. The dissolved oxygen (DO) depletion of the dilution water blank exceeded 0.2 mg/L. G2. The bacterial seed controls did not meet the requirement of a DO depletion of at least 2.0 mg/L and/or a DO residual of at least 1.0 mg/L. G3. No sample dilution met the requirement of a DO depletion of at least 2.0 mg/L and/or a DO residual of at least 1.0 mg/L. G4. Evidence of toxicity was present. This is generally characterized by a significant increase in the BOD value as the sample concentration decreases. The reported value is calculated from the highest dilution representing the maximum loading potential and should be considered an **estimated** value. G5. The glucose/glutamic acid standard exceeded the range of 198± 30.5 mg/L. G6. The calculated seed correction exceeded the range of 0.6 to 1.0 mg/L. G7. Less than 1 mg/L DO remained for all dilutions set. The reported value is an **estimated** greater than value and is calculated for the dilution using the least amount of sample. G8. Oxygen usage is less than 2 mg/L for all dilutions set. The reported value is an **estimated** less than value and is calculated for the dilution using the most amount of sample. G9. The DO depletion of the dilution water blank produced a negative value.
J	**Estimated** value; value may not be accurate. This code is to be used in the following instances: J1. Surrogate recovery limits have been exceeded; J2. The reported value failed to meet the established quality control criteria for either precision or accuracy; J3. The sample matrix interfered with the ability to make any accurate determination; J4. The data is questionable because of improper laboratory or field protocols (e.g. composite sample was collected instead of grab, plastic instead of glass container) J5. Temperature limits exceeded (samples frozen or >6° C) during transport or not verifiable (e.g., no temperature blank provided);, non-reportable for NPDES compliance monitoring. J6. The laboratory analysis was from an unpreserved or improperly chemically preserved sample. The data may not be accurate. J7. This qualifier is used to identify analyte concentration exceeding the upper calibration range of the analytical instrument/method. The reported value should be considered estimated. J8. Temperature limits exceeds (samples frozen or >6°C during storage. The data may not be accurate. J9. The reported value is determined by a **one-point estimation** rather than against a regression equation. The estimated concentration is less than the laboratory practical quantitation limit and greater than the laboratory method detection limit. J10. Unidentified peak; estimated value. J11. The reported value is determined by a **one-point estimation** rather than against a regression equation. The estimated concentration is less than the laboratory practical quantitation limit and greater than the laboratory method detection limit. *This code is used when an MDL has not been established for the analyte in question.* J12. The calibration verification did not meet the calibration acceptance criterion for **field parameters**. Note: A "J" value shall not be used if another code applies (ex. N, V, M).

Data Remark Code	Code Definition
M	Sample and duplicate results are "out of control." The sample is non-homogenous (e.g. VOA soil). The reported value is the lower value of duplicate analyses of a sample.
N	Presumptive evidence of presence of material; **estimated** value. This code is to be used if: N1. The component has been tentatively identified based on mass spectral library search; N2. There is an indication that the analyte is present, but quality control requirements for confirmation were not met (i.e., presence of analyte was not confirmed by alternate procedures). N3. This code shall be used if the level is too low to permit accurate quantification, but the **estimated** concentration is less than the laboratory practical quantitation limit and greater than the laboratory method detection limit. *This code is not routinely used for most analyses.* N4. This code shall be used if the level is too low to permit accurate quantification, but the estimated concentration is less than the laboratory practical quantitation limit and greater than the instrument noise level. *This code is used when an MDL has not been established for the analyte in question.* N5. The component has been tentatively identified based on a retention time standard.
P	Elevated practical quantitation limit (PQL)* due to matrix interference and/or sample dilution.
Q	Holding time exceeded. These codes shall be used if the value is derived from a sample that was received, prepared and/or analyzed after the approved holding time restrictions for sample preparation and analysis. The value does not meet NPDES requirements. Q1. Holding time exceeded prior to receipt by lab Q2. Holding time exceeded following receipt by lab
S	Not enough sample provided to prepare and/or analyze a method-required matrix spike (MS) and/or duplicate (MSD).
U	Indicates that the analyte was analyzed for but not detected above the reported practical quantitation limit (PQL)*. The number value reported with the "U" qualifier is equal to the laboratory's PQL*.
V	Indicates the analyte was detected in both the sample and the associated method blank. Note: The value in the blank shall not be subtracted from the associated samples.
X	Sample not analyzed for this constituent. This code is to be used if: X1. Sample not screened for this compound. X2. Sampled, but analysis lost or not performed-field error X3. Sampled, but analysis lost or not performed-lab error
Y	Elevated PQL* due to insufficient sample size
Z	The presence or absence of the analyte cannot be verified. The sample analysis/results are not reported due to: Z1. Inability to analyze the sample. Z2. Questions concerning data reliability.

*PQL, The Practical Quantitation Limit (PQL), is defined as the lowest level achievable among laboratories within specified limits during routine laboratory operation. The Practical Quantitation Limit (PQL) is "about three to five times the method detection limit (MDL) and represents a practical and routinely achievable detection level with a relatively good certainty that any reported value is reliable." (APHA, AWWA, WEF. 1992. Standard Methods for the Examination of Water and Wastewater, 18th ed.)

** Data remarks are current as of February 22, 2010

APPENDIX C

DATA FORMAT AND REPORTING REQUIREMENTS

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Data Format for Monthly submittals

Table C-1 provides the required data submittal spreadsheet format with sample data. Do not use commas, tabs, pipes or other common file delimiters anywhere in the table. The first row should contain the column headings only. Column headings must include appropriate information on measurement units (mg/l, µg/l, cfu/100ml, etc.). The second row must contain the method code. It is very important that the format of the headings and the number and order of columns is consistent among all monthly submissions. The DWQ station number must be provided (e.g. B6140000). An additional column containing the location description is acceptable as long as it is consistently included. Include a comment column for describing pertinent information related to the sampling event or specific samples. Ensure no missing values for station, date, time, and depth. Place all remark codes in a separate column as demonstrated in Table C-1. If there is no result for a particular parameter, leave the cell blank. Screen all data for inappropriate or improbable values, such as a pH of 21.2.

Annual Report

The UCFRBA will be required to submit an annual report by April 30th for each year the MOA is in effect. The annual report will summarize all data collected in the past calendar year and contain the following elements:

- Monitoring Station List to include station number, station description, county, accurate coordinates (in decimal degrees to 4 decimal places), stream classification, and 8 digit hydrologic unit code (HUC).
- List of all certified laboratories that conducted work for the coalition in the past year, identify time frames for all laboratories and analysis methods used during the year and summarize any laboratory certification issues for individual parameters.
- Submit a CD that includes all monitoring data for the past year with a statistical summary for each station. These data should be combined into a single table containing the year's reviewed and finalized data. The annual statistical summary must describe for each parameter at each location:
    - Number of observations (N)
    - Number of observations less than the laboratory reporting level (N<RL)
    - Identify the water quality standard, action level, or other reference level (Ref)
    - Identify the number of observations that do not meet the reference level (N>Ref) or (N<Ref)
    - Maximum observed value (Max) and Minimum observed value (Min)
    - Annual arithmetic mean value (except for fecal coliform where geometric mean values should be calculated and pH)
- Include a list of active UCFRBA members with authorized representative updates, contact names, email addresses and phone numbers. Identify the facility name and permit number.
- Provide a list of members that are no longer active in the UCFRBA and their permit numbers.
- Provide a list of changes in members' names, ownerships, and discharge locations.
- Summarize all quality assurance and quality control issues and any field audits conducted.
- Summarize any significant issues, special studies, or projects.
- Describe any required data collection that was missed and provide an explanation.
- Review and update the monitoring program and suggest potential MOA modifications.
- Provide the UCFRBA's Website Address.

Table C-1
File Format for Coalition Data Reporting

				Temp (ºC)	Temp_rmk	DO (mg/l)	DO_rmk	pH (su)	pH_rmk	Conductivity (µS/cm)	Conductivity_rmk	Fecal Coliform	Fecal Coliform_rmk	Suspended Residue (mg/l)	Suspended Residue_rmk	Turbidity (NTU)	Turbidity_rmk	Chlorophyll a (µg/l)	Chlorophyll_rmk	NH3_N (mg/l)	NH3_N_rmk	TKN_N (mg/l)	TKN_N_rmk	NO2_NO3_N (mg/l)	NO2_NO3_N_rmk	TP_P (mg/l)	TP_P_rmk
Station	**Date (m/d/yyyy)**	**Time (hh:mm)**	**Depth (m)**	**10**	**10 rmk**	**300**	**300 rmk**	**400**	**400 rmk**	**94**	**94 rmk**	**31616**	**31616 rmk**	**530**	**530 rmk**	**82079**	**82079 rmk**	**32230**	**32230 rmk**	**610**	**610 rmk**	**625**	**625 rmk**	**630**	**630rmk**	**665**	**665 rmk**
A1234567	8/19/2002	15:30	0.1	25.2		7.8		6.9		133		110		45		22		23	Q1	0.1		0.2		0.3			
B9876543	8/20/2002	11:50	0.1	27.2		7.1		7.2		125		30		4		5.6		5		0.14		0.6		0.31			
B9876543	8/20/2002	11:50	1	28		6.5		7		122																	
B9876543	8/20/2002	11:50	2	25		6.7		6.9		119																	
B9876543	8/20/2002	11:50	3	17		5.5		6.7		120																	
C1357924	8/21/2002	16:10	0.1	22.1		3.1		6.2		233		15	B1	55		11											
C0246813	9/1/2002	9:30	0.1	19.7		8.3		7		99		6000	B5	410		36				0.26		0.4		0.57			
C0246813	10/1/2002	11:30	0.1	12		8.9		7.3		115		1200	B3	95	A		X3			0.16	J2	0.2		0.09			

Table C-1 Cont'd
File Format for Coalition Data Reporting

Cadmium, Cd (µg/l)	Cadmium, Cd_rmk	Chromium, Cr (µg/l)	Chromium, Cr_rmk	Copper, Cu (µg/l)	Copper, Cu_rmk	Nickel, Ni (µg/l)	Nickel, Ni_rmk	Lead, Pb (µg/l)	Lead, Pb_rmk	Zinc, Zn (µg/l)	Zinc, Zn_rmk	Aluminum, Al (µg/l)	Aluminum, Al_rmk	Iron, Fe (µg/l)	Iron, Fe_rmk	Manganese, Mn (µg/l)	Manganese, Mn_rmk	Arsenic, As (µg/l)	Arsenic, As_rmk	Mercury, Hg (µg/l)	Mercury, Hg_rmk	Comments
1027	1027 rmk	1034	1034 rmk	1042	1042 rmk	1067	1067 rmk	1051	1051 rmk	1092	1092 rmk	1105	1105 rmk	1045	1045 rmk	1055	1055 rmk	1002	1002 rmk	71900	71900 rmk	
130		11		3		27		4.4		610		10				0.21		12		12		
120		10	U	2	U	25	U	2	U	510		10	U	10	U	0.2	U	10	U	10	U	
																						Dry stream
333		10	U	2	U	25	U	2	U	624		10	U	10	U	0.2	U	10	U	10	U	Nutrient sample spilled
120		10	U	2	U	25	U	2	U	510		10	U	10	U	0.2	U	10	U	10	U	2.5" of rain on 8/31/2002
120		10	U	2	U	25	U	2	U	510		10	U	10	U	0.2	U	10	U	10	U	