

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

**Effective:  
May 1, 2015 through April 30, 2020**



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 RESOURCES (DWR), 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 DWR 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 DWR, 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 DWR 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 DWR 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 DWR using the format documented in Appendix C of this MOA preferably in Microsoft<sup>®</sup> Excel, or the equivalent. The UCFRBA shall submit the water quality data to the DWR 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 DWR 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 DWR, 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 DWR in the required format, may result in the revocation of this MOA by the DWR 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 activities and formally finalizes the water quality data. The report shall be submitted no later than April 30<sup>th</sup> 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 DWR Coalition Coordinator 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 DWR Coalition Coordinator 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 DWR and the UCFRBA. The DWR 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 DWR and the UCFRBA. The amendment shall be signed by the UCFRBA chairman and by the DWR. 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. 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 DWR is currently in the process of reviewing metals water quality assessment techniques, evaluation criteria and relevant standards. However, the DWR expects to conclude the review within the life cycle of this MOA. At such time, or when the DWR Director mandates, the UCFRBA is expected to resume monitoring at a level of effort similar to that historically performed. 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 DWR and the UCFRBA and shall require a written amendment to this MOA signed by the UCFRBA chairman, by the DWR, and by an authorized representative of any such discharger who wishes to enter into the MOA. The DWR will not unreasonably withhold consent to the addition of a discharger to the MOA. The DWR 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, 2020 unless extended by the consent of both the DWR and the UCFRBA. Upon sixty (60) days written notice, the DWR 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 DWR Coalition Coordinators, the appropriate DWR Regional Office, and the DWR 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 DWR 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 DWR.

**DIVISION OF WATER RESOURCES**

**UPPER CAPE FEAR  
RIVER BASIN ASSOCIATION**

By: Signed 4.29.15  
**Jay Zimmerman**  
**Interim Director**  
**Division of Water Resources**

By: Signed 4.29.15  
**Charles Cocker**  
**Chairman**  
**Upper Cape Fear Basin Association**

Date: \_\_\_\_\_

Date: \_\_\_\_\_

**Table 1  
UCFRBA PERMITTEES**

<b>NPDES Permit Number</b>	<b>Upper Cape Fear River Basin Association Permittees Ownership and Facility</b>	<b>Authorized Representative and Title</b>
NC0000892	Arclin Arclin WWTP	Bowman Harvey Senior HSE Coordinator
NC0001899	Performance Fibers, Inc. Performance Fibers WWTP	Donald Peterson Plant Manager
NC0020354	Town of Pittsboro Pittsboro WWTP	Bryan Gruesbeck Town Manager
NC0021211	City of Graham Graham WWTP	Mr. Victor Quick Utilities Director
NC0021474	City of Mebane Mebane WWTP	David Cheek City Manager
NC0023868	City of Burlington Burlington East WWTP	Mr. Bob Patterson Water Resources Director
NC0023876	City of Burlington Burlington South WWTP	Mr. Bob Patterson Water Resources Director
NC0024147	City of Sanford Sanford WWTP	Mr. Scott Siletzky WWTP Superintendent
NC0024210	City of High Point East Side WWTP	Mr. Terry Houk Director of Public Services
NC0024325	City of Greensboro North Buffalo Creek WWTP	Mr. Steve Drew Water Resources Director
NC0024881	City of Reidsville Reidsville WWTP	Mr. Kevin Eason Public Works Director
NC0025241	Orange Water and Sewer Authority Mason Farm WWTP	Mr. Ed Kerwin Executive Director
NC0025445	City of Randleman Randleman WWTP	Mr. Nick Holcomb City Manager
NC0026123	City of Asheboro Asheboro WWTP	Mr. Michael Rhoney Water Resources Director
NC0026441	Town of Siler City Siler City WWTP	Mr. Bryan Thompson Town Manager
NC0026565	City of Ramseur Ramseur WWTP	Mr. Jim McIntosh Public Works Director
NC0047384	City of Greensboro TZ Osborne WWTP	Mr. Steve Drew Water Resources Director
NC0047597	City of Durham South Durham WRF	Charlie Cocker Plant Superintendent - SDWRF
NC0058548	Town of Star Star WWTP	Ms. Mary H. O'Brien Mayor
NC0072575	Pilgrim's Pilgrim's WWTP	Tina Pedley Ascend Leadership Trainee/ Wastewater Supervisor
NC0083852	Pilgrim's Pilgrim's WTP	Tina Pedley Ascend Leadership Trainee/ Wastewater Supervisor

## UCFRBA PERMITEE SIGNATURES

NPDES Permit Number	Permittee	Signature	Date
NC0000892	Arclin Arclin WWTP	<u>Signature received</u> Mr. Bowman Harvey Senior HSE Coordinator	4.17.15
NC0001899	Performance Fibers, Inc. Performance Fibers Moncure WWTP	<u>Signature received</u> Mr. Donald Peterson Plant Manager	4.29.15
NC0020354	Town of Pittsboro Pittsboro WWTP	<u>Signature received</u> Mr. Bryan Gruesbeck Town Manager	4.28.15
NC0021211	City of Graham Graham WWTP	<u>Signature received</u> Mr. Victor Quick Utilities Director	4.16.15
NC0021474	City of Mebane Mebane WWTP	<u>Signature received</u> Mr. David Cheek City Manager	4.27.15
NC0023868	City of Burlington Burlington East WWTP	<u>Signature received</u> Mr. Bob Patterson Water Resources Director	4.27.15
NC0023876	City of Burlington Burlington South WWTP	<u>Signature received</u> Mr. Bob Patterson Water Resources Director	4.27.15
NC0024147	City of Sanford Sanford WWTP	<u>Signature received</u> Mr. Scott Siletzky WWTP Superintendent	4.17.15
NC0024210	City of High Point Eastside WWTP	<u>Signature received</u> Mr. Terry Houk Director of Public Services	4.17.15
NC0024325	City of Greensboro North Buffalo Creek WWTP	<u>Signature received</u> Mr. Steve Drew Water Resources Director	4.27.15



## UCFRBA PERMITEE SIGNATURES

NPDES Permit Number	Permittee	Signature	Date
NC0024881	City of Reidsville Reidsville WWTP	<u>Signature received</u> Mr. Kevin Eason Public Works Director	4.27.15
NC0025241	Orange Water and Sewer Mason Farm WWTP	<u>Signature received</u> Mr. Ed Kerwin Executive Director	4.22.15
NC0025445	City of Randleman Randleman WWTP	<u>Signature received</u> Mr. Nick Holcomb City Manager	4.22.15
NC0026123	City of Asheboro Asheboro WWTP	<u>Signature received</u> Mr. Michael Rhoney Water Resources Director	4.13.15
NC0026441	Town of Siler City Siler City WWTP	<u>Signature received</u> Mr. Bryan Thompson Town Manager	4.22.15
NC0026565	City of Ramseur Ramseur WWTP	<u>Signature received</u> Mr. Jim McIntosh Public Works Director	4.17.15
NC0047384	City of Greensboro TZ Osborne WWTP	<u>Signature received</u> Mr. Steve Drew Water Resources Director	4.27.15
NC0047597	City of Durham South Durham WRF	<u>Signature received</u> Mr. Charlie Cocker Plant Superintendent - SDWRF	
NC0058548	Town of Star Star WWTP	<u>Signature received</u> Ms. Mary H. O'Brien Mayor	4.21.15

## UCFRBA PERMITEE SIGNATURES

<b>NPDES Permit Number</b>	<b>Permittee</b>	<b>Signature</b>	<b>Date</b>
NC0072575	Pilgrims Pilgrims WWTP	<u>Signature received 4.13.15</u> Ms. Tina Pedley Ascend Leadership Trainee/ Wastewater Supervisor	
NC0083852	Pilgrims Pilgrims WTP	<u>Signature received 4.13.15</u> Ms. Tina Pedley Ascend Leadership Trainee/ Wastewater Supervisor	

**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	<sup>1</sup> Field Parameters	Fecal Coliform	Turbidity	TSS	<sup>2</sup> Nutrients	<sup>3</sup> 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 <sup>1</sup>	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	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 (Sweepsonville Rd) nr Sweepsonville	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 Sweepsonville	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	<sup>1</sup> Field Parameters	Fecal Coliform	Turbidity	TSS	<sup>2</sup> Nutrients	<sup>3</sup> 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	
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	
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	

DWQ Station Number	Location	Station Comments	Latitude (dd.dddd)	Longitude (dd.dddd)	County	Stream Class	Stream Index	Sub-Basin	<sup>1</sup> Field Parameters	Fecal Coliform	Turbidity	TSS	<sup>2</sup> Nutrients	<sup>3</sup> Metals
B5890000	Loves Crk at Water Treatment Plant Rd at Siler City	Siler City WWTP Sampling Program	35.7298	-79.4289	CHATHAM	C	17-(43)-10	03-06-12	M + 2SM	M	M		M	
B5920000	Loves Creek at Progress Blvd at Siler City	Siler City WWTP Sampling Program	35.7322	-79.4246	CHATHAM	C	17-(43)-10	03-06-12	M + 2SM	M	M		M	

<sup>1</sup> Field Parameters include Temperature, Dissolved Oxygen, pH, and Conductivity

<sup>2</sup> Nutrients include Ammonia as N (NH<sub>3</sub>), Total Kjeldahl Nitrogen (TKN), Nitrate/Nitrite as N (NO<sub>2</sub>/NO<sub>3</sub>), and Total Phosphorus as P

<sup>3</sup> 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.

<sup>4</sup> Station will be monitored until the City of Greensboro North Buffalo Creek WWTP is decommissioned. The UCFRBA will notify the Monitoring Coalition Coordinator when this occurs so that the station can be discontinued.

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 DWR certified laboratories in accordance with the DWR NPDES Discharge Monitoring Coalition Program Field Monitoring Guidance Document (December 2012) 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 DWR coalition coordinator prior to use.

### **Laboratory Analysis**

All laboratory analyses shall be performed at a DWR 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 DWR Laboratory Certification Branch (<http://portal.ncdenr.org/web/wq/lab/cert/nonfield/methods>) or the Director of DWR. 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 DWR Laboratory. For guidance purposes Table B-1 lists target reporting levels for each parameter based on the reporting levels of the DWR Laboratory. The lowest possible analytical limits for all the parameters should be pursued.

**TABLE B-1  
DWR Laboratory Reporting Limits**

<b>Parameters</b>	<b>Target Reporting Level</b>	<b>Comments</b>
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 $\mu\text{mho}/\text{cm}$ at 25 °C.
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 <i>a</i>	1 $\mu\text{g}/\text{L}$	Report Chlorophyll <i>a</i> values free from pheophytin and other chlorophyll pigments. Analysis by HPLC is not approved by DWR.
Ammonia (NH <sub>3</sub> 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*		

RLs current as of 1/21/2015

\* No requirements for metals monitoring are included in this MOA, as the DWR is currently in the process of reviewing metals water quality assessment techniques, evaluation criteria and relevant standards. However, the DWR expects to conclude the review within the life cycle of this MOA. At such time, or when the DWR 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 DWR’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/ess/eco/coalition>.

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

<b>Data Remark Code</b>	<b>Code Definition</b>
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	<p>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:</p> <p align="center"><i>Fecal coliform bacteria: 20-60 colonies                      Total coliform bacteria: 20-80 colonies</i></p> <p>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.</p> <p>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 "&lt;" value).</p> <p>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 "&gt;" value.</p> <p>B4. Filters have counts of both &gt;60 or 80 and &lt;20. Reported value is a total of the counts from all countable filters reported per 100 mL.</p> <p>B5. Too many colonies were present; too numerous to count (TNTC). TNTC is generally defined as &gt; 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.</p> <p>B6. Estimated Value. Blank contamination evident.</p> <p>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.</p>
C	Total residual chlorine was present in sample upon receipt in the laboratory; value is <b>estimated</b> . Generally applies to cyanide, phenol, NH <sub>3</sub> , TKN, coliform, and organics)

Data Remark Code	Code Definition
G	<p>A <u>single</u> quality control failure occurred during biochemical oxygen demand (BOD) analysis. The sample results should be used with caution.</p> <p>G1. The dissolved oxygen (DO) depletion of the dilution water blank exceeded 0.2 mg/L.</p> <p>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.</p> <p>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.</p> <p>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 <b>estimated</b> value.</p> <p>G5. The glucose/glutamic acid standard exceeded the range of 198± 30.5 mg/L.</p> <p>G6. The calculated seed correction exceeded the range of 0.6 to 1.0 mg/L.</p> <p>G7. Less than 1 mg/L DO remained for all dilutions set. The reported value is an <b>estimated</b> greater than value and is calculated for the dilution using the least amount of sample.</p> <p>G8. Oxygen usage is less than 2 mg/L for all dilutions set. The reported value is an <b>estimated</b> less than value and is calculated for the dilution using the most amount of sample.</p> <p>G9. The DO depletion of the dilution water blank produced a negative value.</p>
J	<p><b>Estimated</b> value; value may not be accurate. This code is to be used in the following instances:</p> <p>J1. Surrogate recovery limits have been exceeded;</p> <p>J2. The reported value failed to meet the established quality control criteria for either precision or accuracy;</p> <p>J3. The sample matrix interfered with the ability to make any accurate determination;</p> <p>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)</p> <p>J5. Temperature limits exceeded (samples frozen or &gt;6° C) during transport or not verifiable (e.g., no temperature blank provided);, non-reportable for NPDES compliance monitoring.</p> <p>J6. The laboratory analysis was from an unpreserved or improperly chemically preserved sample. The data may not be accurate.</p> <p>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.</p> <p>J8. Temperature limits exceeds (samples frozen or &gt;6°C during storage. The data may not be accurate.</p> <p>J9. The reported value is determined by a <b>one-point estimation</b> 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.</p> <p>J10. Unidentified peak; estimated value.</p> <p>J11. The reported value is determined by a <b>one-point estimation</b> 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. <i>This code is used when an MDL has not been established for the analyte in question.</i></p> <p>J12. The calibration verification did not meet the calibration acceptance criterion for <b>field parameters</b>.</p> <p>Note: A "J" value shall not be used if another code applies (ex. N, V, M).</p>

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

\*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, 18<sup>th</sup> ed.)

\*\* Data remarks are current as of December 7, 2011



## **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. Do not use commas, tabs, pipes or other common file delimiters anywhere in the table. Do not add, delete or hide rows or columns. 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 DWR station number (e.g. B6140000) must be provided as identified in the MOA. The comment column is used for describing pertinent information related to the sampling event or specific samples. Ensure that there are 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. Delete duplicate rows for stations that were not sampled (e.g. stations sampled twice in summer months). Screen all data for inappropriate or improbable values, such as a pH of 21.2 SU.

### **Annual Report**

The UCFRBA will be required to submit an annual report by April 30<sup>th</sup> for each year the MOA is in effect. The annual report will summarize all data collection activities 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.
- A list of active UCFRBA members with authorized representative updates, contact names, email addresses and phone numbers. Identify the facility name and permit number.
- A list of members whom became inactive during the year and their permit number.
- A list of changes in members' names, ownerships, and discharge locations.
- A summary of all quality assurance and quality control issues and any field audits conducted.
- A summary of any significant issues, special studies, or projects.
- Description of any required data collection that was missed with an explanation.
- Suggested changes to the monitoring program and/or MOA modifications.
- The UCFRBA's website address.

**Table C-1  
File Format for Coalition Data Reporting**

				Temp (°C)	Temp_rmk	DO (mg/L)	DO_rmk	pH (SU)	pH_rmk	Conductivity (µohm/cm)	Conductivity_rmk	Fecal Coliform (colonies/100ml)	Fecal Coliform_rmk	Suspended Residue (mg/L)	Suspended Residue_rmk	Enterococcus (colonies/100mL)	Enterococcus_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	
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	61211	61211_rmk	82079	82079_rmk	32209	32209_rmk	610	610_rmk	625	625_rmk	630	630_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**

TP_P (mg/L)	TP_P_rmk	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
665	665_rmk	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	
																								Secchi depth 1.2 meters
		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	