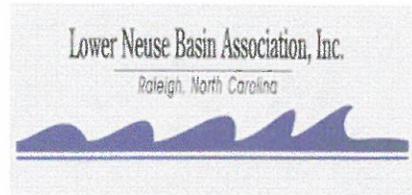


**Memorandum of Agreement
Among
The State of North Carolina's Division of Water Resources,
The Lower Neuse Basin Association Permittees,
and
The Lower Neuse Basin Association**



**Effective:
August 1, 2019 through July 31, 2024**

MEMORANDUM OF AGREEMENT

This Memorandum of Agreement (MOA) is entered into this 1st day of August 2019, by and among the NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY'S DIVISION OF WATER RESOURCES (DWR), the NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) DISCHARGERS in the Lower Neuse River Basin who have voluntarily executed this MOA (LNBA PERMITTEES), and the LOWER NEUSE BASIN ASSOCIATION (LNBA), a non-profit corporation whose members include the LNBA PERMITTEES (see Table 1).

WITNESSETH, THAT,

Whereas, the LNBA Permittees have instream (e.g., upstream and downstream) monitoring requirements in their respective NPDES permits pursuant to Federal and State law.

Whereas, the DWR has obligations to collect water quality data, which it uses for various purposes, including but not limited to enforcement, regulatory, scientific, and educational purposes.

Whereas, DWR has discretion in determining instream sampling locations in the context of NPDES permitting.

Whereas, the LNBA Permittees are willing to combine their resources to provide for a more efficient and effective method for instream monitoring to meet the requirements of their respective NPDES permits.

Whereas, all parties to this MOA benefit from the collection of instream water quality data in the Lower Neuse River Basin.

NOW, THEREFORE, in consideration of mutual benefits that will accrue to each party, the parties agree as follows:

Purpose:

- The purpose of this MOA is to:
 - 1) facilitate the collection of instream water quality data for parameters that are of interest to all parties to this MOA;
 - 2) facilitate the collection of instream water quality data at preferred sampling locations (i.e., to reduce duplicative sampling locations and to sample at locations that would otherwise not be sampled) which are mutually agreeable to the both parties;
 - 3) facilitate the collection of instream water quality data at frequencies that provide useful information to all parties to this MOA;
 - 4) leverage the resources available to the parties of this MOA for instream sampling; and
 - 5) provide all parties with consistent instream water quality data for the Neuse Basin.

General Provisions:

- This MOA only applies to the collection and submission of instream water quality monitoring data for the parameters, locations, and frequencies identified in Table 2.
- Nothing in this MOA precludes DWR from requesting LNBA Permittees or LNBA to take additional samples. Similarly, there is nothing in this MOA that precludes LNBA Permittees or LNBA to voluntarily conduct and submit sampling data to DWR in addition to what is set forth in Table 2, including hardness and emerging contaminants.

- This MOA does not relieve LNBA Permittees from complying with other NPDES permit requirements, including influent and effluent monitoring requirements, or other Federal and State laws, including State water quality standards.
- By signing this MOA, the LNBA PERMITTEES authorize the LNBA to act as their agent and on their behalf in collecting and submitting instream monitoring data to DWR for the parameters listed in Table 2.
- The LNBA PERMITTEES are exempted from instream water quality monitoring for certain parameters *as specified in their individual NPDES permits*. If there is any discrepancy or conflict between this MOA and an LNBA Permittee's NPDES permit, the LNBA Permittee's NPDES permit shall prevail.

Collection of instream water quality data:

- The LNBA and its agents shall perform the collection and analyses of the instream water quality monitoring data for the parameters, locations and frequencies specified in Table 2 of this MOA.
- The LNBA will contract for the performance of the monitoring activities with a laboratory appropriately certified by DWR for the required laboratory and field analysis.
- The LNBA and its agents shall comply with the requirements and protocols set forth in Tables 3 and 4 located in Appendix A.

Submission of (monthly) instream water quality data to DWR:

- The LNBA shall submit the monitoring results to DWR on behalf of LNBA PERMITTEES.
- The LNBA shall submit the water quality data to the DWR within 90 days of the end of the month in which the sampling was performed to the Coalition Coordinator at coalitioncoordinator@ncdenr.gov.
- The LNBA or its agents shall submit the water quality data to the DWR in a format set forth in Table 5 located in Appendix B of this MOA and preferably in Microsoft® Excel.
- The LNBA shall archive all data for five (5) years.
- The LNBA PERMITTEES may provide comments to DWR on data and work submitted by LNBA to DWR.
- Failure by the LNBA PERMITTEES or the LNBA or their agents to collect or analyze the water quality data as described in this MOA, or to provide data to the DWR in the required format, may result in the termination of this MOA by the DWR and the return to individual upstream and downstream monitoring requirements, as specified in the individual NPDES permits for each of the LNBA PERMITTEES.
- Special and/or additional data collected (i.e., hardness) at a designated monitoring station concurrently with the regularly scheduled samples, should be submitted to the Coalition Coordinator

Annual Report:

- The LNBA shall submit an annual written report that summarizes the previous calendar year's sampling activities.
- The LNBA shall submit the annual report no later than April 30th each year that this MOA is in effect and shall comply with the requirements set forth in Appendix B.
- The LNBA shall submit the annual report to the DWR Coalition Coordinator at 1621 Mail Service Center, Raleigh, NC 27699-1621 or electronically at coalitioncoordinator@ncdenr.gov.

Signatures for all Submissions to DWR:

- The LNBA Chair shall sign annual reports submitted to DWR pursuant to this MOA.

Special Circumstances effecting sampling:

- Stream sampling under this MOA may be suspended or discontinued under the following circumstances:
 - 1) If flow conditions in the receiving waters and/or extreme weather conditions will result in a substantial risk of injury to the person(s) collecting samples; or
 - 2) If environmental conditions, such as a dry stream, prevent sample collection.
- If sampling is suspended or discontinued for any reason, the LNBA shall provide a written explanation to DWR explaining why sampling was not performed. The written explanation shall be submitted to the DWR Coalition Coordinator with LNBA's monthly data submittal (electronic submittal is authorized).
- If sampling is suspended or discontinued under the provisions above, LNBA shall resume stream sampling as soon as possible.

Modification:

- This MOA may be modified by the written consent of the DWR and the LNBA. Either DWR or the LNBA may determine that it is necessary to request changes in monitoring frequency, parameters, and/or sampling locations. Any changes to sampling parameters, locations, or frequencies shall be made by a written amendment to this MOA agreed to by the DWR, the LNBA PERMITTEES, and the LNBA. The amendment shall be signed by the LNBA chair and by the DWR Director. Such amendments may be entered into at any time.

New Parties to this MOA:

- The following additional NPDES permit dischargers may enter into this MOA subsequent to the effective date hereof:
 - 1) Dischargers who receive a NPDES permit within the Lower Neuse River Basin, or
 - 2) Dischargers who have NPDES permits within the Lower Neuse 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, the LNBA PERMITTEES, and the LNBA and shall require a written amendment to this MOA signed by the LNBA chairperson, 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 NPDES permit discharger to the MOA. Such amendments may be made at any time that this MOA is in effect. The LNBA PERMITTEES included in this MOA are listed in Table 1.

Term:

- This MOA shall be effective upon the signature shall be effective until July 31, 2024 unless extended by the consent of both the DWR Director and the LNBA.

Withdraw/Termination as between DWR and LNBA:

- Upon sixty (60) days written notice, the DWR or the LNBA may terminate this MOA for any reason. Upon termination of this MOA, the monitoring requirements contained in the individual NPDES permit for each LNBA PERMITTEE shall become effective immediately.

Withdraw/Termination as between DWR and individual LNBA Permittees:

- An individual permit holder may withdraw and cancel its participation in this MOA by providing sixty (60) days written notice to the LNBA, and sixty (60) days written notice to the DWR Coalition Coordinator, the appropriate DWR Regional Office(s), and the DWR Water Quality Permitting Section. The monitoring requirements contained in the individual NPDES permit shall become effective upon the termination date specified in the notice.
- The withdrawal of an individual LNBA Permittee shall require a written amendment to this MOA signed by the LNBA chair and the DWR Director.
- In the event a LNBA NPDES permit holder terminates or cancels its participation in this MOA or its membership in the LNBA is terminated for any reason, the LNBA may request that DWR review the monitoring plan described in this MOA for a possible reduction in sampling effort and/or requirements.

No limitation on use of the data:

- There are no limitations on DWR's, LNBA, or LNBA Permittee's use of the data collected under this MOA.

Entire Agreement:

- This MOA constitutes the entire agreement between the parties and supersedes all previous agreements.

Incorporation:

- Appendices A and B are attached to and incorporated into this MOA.

Savings Clause:

- 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.

Remedies for Breach:

- The only remedy for breach of this MOA is an action for specific performance or injunction.

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**

By: 

**Linda Culpepper
Director
Division of Water Resources**

Date: 8-9-2019

**LOWER NEUSE BASIN
ASSOCIATION**

By: 

**Daniel F. McLawhorn
Chair
Lower Neuse Basin Association**

Date: 7-25-19

Table 1 – LNBA Permittees

NPDES Permit Number	LNBA Permittees Ownership and Facility	Authorized Representative and Title	Authorized Representative Signature	Signature Date
NC0003417	Duke Energy Progress - Lee Steam Plant	Jeffery D. Hines General Manager	<i>Jeffery D. Hines</i>	7/18/2019
NC0003760	E.I. DuPont - Kinston Plant	George Xanakis Plant Manager	<i>George Xanakis</i>	7/19/2019
NC0020389	Town of Benson - Benson WWTP	Tim Robbins Public Utility Director	<i>Tim Robbins</i>	7/23/2019
NC0021253	City of Havelock - Havelock WWTP	Frank Bottorff City Manager	<i>Frank Bottorff</i>	7/19/2019
NC0021644	Town of LaGrange - LaGrange WWTP	John Craft Town Manager	<i>John Craft</i>	7/18/19
NC0023906	City of Wilson - Wilson WWTP	Jimmy Pridgen Water Reclamation Manager	<i>Jimmy Pridgen</i>	7.24.19
NC0023949	City of Goldsboro - Goldsboro WWTP	Timothy M. Salmon City Manager	<i>Timothy M. Salmon</i>	18 Jul 19
NC0024236	City of Kinston - Regional WWTF	Rhonda Barwick Director of Public Services	<i>Rhonda Barwick</i>	18 Jul 19
NC0025348	City of New Bern - New Bern WWTP	Mark Stephens City Manager	<i>Mark Stephens</i>	7/19/19
NC0025453	Town of Clayton - Little Creek WWTP	Adam Lindsay Town Manager	<i>Adam Lindsay</i>	7-18-19
NC0029033	City of Raleigh - Neuse River WWTP	John Kiviniemi Wastewater & Reuse Superintendent	<i>John Kiviniemi</i>	7/22/19
NC0029572	Town of Farmville - Farmville WWTP	David Hodgkins Town Manager	<i>David Hodgkins</i>	7/24/19
NC0030716	Johnston County - Central Johnston County WWTP	Rick J. Hester County Manager	<i>Rick J. Hester</i>	7-26-19
NC0030759	City of Raleigh - Smith Creek WWTP	John Kiviniemi Wastewater & Reuse Superintendent	<i>John Kiviniemi</i>	7/22/19
NC0032077	Contentnea Metropolitan Sewerage District - Contentnea MSD WWTP	Charles M Smithwick Jr. District Manager	<i>Charles M Smithwick Jr.</i>	7-19-19
NC0048879	Town of Cary - North WWTP	Paul Ray North Cary Facility Manager	<i>Paul Ray</i>	07-24-19
NC0064050	Town of Apex - Apex WRF	Drew Havens Town Manager	<i>Drew Havens</i>	7/24/2019
NC0064891	Town of Kenly - Kenly Regional WWTP	Michael Douglas Town Manager	<i>Michael Douglas</i>	23 Jul 19
NC0065102	Town of Cary - South WWTP	Jarrod Buchanan South Cary Facility Manager	<i>Jarrod Buchanan</i>	July 29, 2019
NC0066150	Town of Fuquay-Varina – Brighton Forest Subdivision WWTP	Jay T. Meyers Public Utilities Director	<i>Jay T. Meyers</i>	22 July 19
NC0066516	Town of Fuquay Varina - Terrible Creek WWTP	Jay T. Meyers Public Utilities Director	<i>Jay T. Meyers</i>	22 July 19
NC0079316	City of Raleigh - Little Creek WWTP	John Kiviniemi Wastewater & Reuse Superintendent	<i>John Kiviniemi</i>	7/22/19
NC0084735	Johnston County - Johnston County WTP	Rick J. Hester County Manager	<i>Rick J. Hester</i>	7-26-19

Table 2
LNBA Sampling Stations, Parameters, & Frequencies

Station Number	Location Description	Station Comments	Latitude	Longitude	County	Region	8 Digit HUC	Stream Class	Index	¹ Field Measurements	² Nutrients	Lab Turbidity	TSS	Chl-a	Fecal Coliform
J2230000	Smith Crk at SR 2045 Burlington Mill Rd nr Wake Forest	DWR benthic and fish station.	35.9182	-78.5348	Wake	RRO	03020201	C NSW	27- 23-(2)	M+2SM	M	M	M		M
J2330000	Neuse Riv at SR 2215 Buffalo Rd nr Neuse	dns Smith Crk WWTP	35.8479	-78.5302	Wake	RRO	03020201	C NSW	27- (22.5)	M+2SM	M	M	M		M
J3310000	Crabtree Crk at SR 2921 N. Raleigh Blvd at Raleigh	dns confluence of Pigeon House Branch	35.8040	-78.6081	Wake	RRO	03020201	C NSW		M+2SM	M	M	M		M
J3970000	Walnut Crk at SR 2551 Barwell Rd nr Raleigh	DWR benthic and fish station	35.7493	-78.5345	Wake	RRO	03020201	C NSW	27- 34-(4)	M+2SM	M	M	M		M
J4050000	Neuse Riv at SR 2555 Auburn Knightdale Rd nr Raleigh	ups Neuse River WWTP	35.7266	-78.5139	Wake	RRO	03020201	C NSW	27- (22.5)	M+2SM	M	M	M		M
J4080000	Poplar Crk at SR 2049 Bethlehem Rd nr Knightdale	last bridge before Neuse	35.7309	-78.4776	Wake	RRO	03020201	C NSW	27-35	M+2SM	M	M	M		M
J4110000	Marks Crk at SR 1714 Pritchard Rd nr Wilson	City of Raleigh sampling & monitoring program	35.7062	-78.4312	Johnston	RRO	03020201	C NSW		M+2SM	M	M	M		M
J4130000	Neuse Riv at SR 1700 Covered Bridge Rd nr Archers Lodge	dns Neuse River WWTP, ups Little Creek (Clayton) WWTP	35.6749	-78.4364	Johnston	RRO	03020201	WS-V NSW	27- (36)	M+2SM	M	M	M		M
J4170000	Neuse Riv at NC 42 nr Clayton	dns Little Crk WWTP, DWR benthic station, USGS gage	35.6473	-78.4056	Johnston	RRO	03020201	WS-IV NSW	27- (38.5)	M+2SM	M	M	M		M
J4370000	Neuse Riv at US 70 Bus at Smithfield	dns Johnston County WTP, DWR AMS Station	35.5128	-78.3498	Johnston	RRO	03020201	WS-IV NSW		M+2SM	M	M	M		M
J4414000	Swift Crk at SR 1152 Holly Springs Rd nr Macedonia	ups Lake Wheeler, DWR benthic and fish station, USGS gage	35.7187	-78.7527	Wake	RRO	03020201	WS-III NSW	27- 43-(1)	M+2SM	M	M	M		M
J4500000	Swift Crk at Indian Crk discharge nr Garner	City of Raleigh sampling & monitoring program	35.6476	-78.6041	Wake	RRO	03020201	C NSW		M+2SM	M	M	M		M
J4510500	Swift Crk at SR 1525 Cornwallis Road nr Clayton	City of Raleigh sampling & monitoring program	35.5999	-78.5356	Johnston	RRO	03020201	C NSW		M+2SM	M	M	M		M

Station Number	Location Description	Station Comments	Latitude	Longitude	County	Region	8 Digit HUC	Stream Class	Index	¹ Field Measurements	² Nutrients	Lab Turbidity	TSS	Chl-a	Fecal Coliform
J4511000	White Oake Ck at NC 42 nr Clayton	City of Raleigh sampling & monitoring program	35.6176	-78.5281	Johnston	RRO	03020201	C NSW		M+2SM	M	M	M		M
J4520000	Swift Ck at SR 1562 Steel Bridge Rd nr Smithfield	City of Raleigh sampling & monitoring program	35.5515	-78.4600	Johnston	RRO	03020201	C NSW		M+2SM	M	M	M		M
J4580000	Swift Ck at SR 1501 Swift Creek Rd nr Smithfield	Replaced J4590000 4/1/12.	35.5442	-78.3970	Johnston	RRO	03020201	C NSW	27-43-(8)	M+2SM	M	M	M		M
J4690000	Middle Ck at SR 1152 Holly Springs Rd nr Holly Springs	ups Cary South WWTP, dns Apex WWTP	35.6609	-78.8042	Wake	RRO	03020201	C NSW	27-43-15-(1)	M+2SM	M	M	M		M
J4868000	Middle Ck at SR 1375 Lake Wheeler Rd nr Banks	dns Cary South WWTP, ups Terrible Ck WWTP discharge	35.6356	-78.7279	Wake	RRO	03020201	C NSW	27-43-15-(4)	M+2SM	M	M	M		M
J4980000	Middle Ck at SR 1006 Old Stage Rd nr Willow Springs	dns of Terrible Ck WWTP	35.6091	-78.6866	Wake	RRO	03020201	C NSW	27-43-15-(4)	M+2SM	M	M	M		M
J5002000	Middle Ck off SR 1517 Old Sanders Hse nr Edmonson	City of Raleigh sampling & monitoring program	35.5626	-78.5756	Johnston	RRO	03020201	C NSW		M+2SM	M	M	M		M
J5010000	Middle Ck at NC 210 near Smithfield	ups of Neuse Riv	35.5075	-78.4013	Johnston	RRO	03020201	C NSW	27-43-15-(4)	M+2SM	M	M	M		M
J5170000	Black Ck at SR 1162 Black Creek Rd nr Four Oaks	ups Holis Lake, ups Neuse Riv, USGS gage	35.4693	-78.4568	Johnston	RRO	03020201	C NSW	27-45-(2)	M+2SM	M	M	M		M
J5250000	Neuse Riv at SR 1201 Richardson Bridge Rd nr Cox Mill	dns Johnston Cty WWTP, ups Duke Energy and Goldsboro WWTP, DWR benthic station	35.3741	-78.1962	Johnston	RRO	03020201	WS-IV NSW	27-(49.5)	M+2SM	M	M	M		M
J5390000	Hannah Ck at SR 1158 Allens Crossroads Dr nr Benson	ups Benson WWTP	35.3868	-78.5110	Johnston	RRO	03020201	C NSW	27-52-6	M+2SM	M	M	M		M
J5390800	Hannah Ck at SR 1227 Ivey Rd nr Benson	dns Benson WWTP	35.4025	-78.4952	Johnston	RRO	03020201	C NSW	27-52-6	M+2SM	M	M	M		M
J5410000	Mill Ck at SR 1200 nr Cox Mill	dns concentrated agricultural area	35.3420	-78.2162	Johnston	RRO	03020201	C NSW	27-52-(1)	M+2SM	M	M	M		M
J5500000	Falling Ck at SR 1219 Old Grantham Rd nr Grantham	dns concentrated agricultural area	35.3224	-78.1282	Wayne	WaRO	03020201	WS-IV NSW	27-54-54-(3.5)	M+2SM	M	M	M		M

Station Number	Location Description	Station Comments	Latitude	Longitude	County	Region	8 Digit HUC	Stream Class	Index	¹ Field Measurements	² Nutrients	Lab Turbidity	TSS	Chl-a	Fecal Coliform
J5620000	Little Riv at SR 2333 Smithfield Rd nr Zebulon	possible future site of E. Wake reservoir (City of Raleigh drinking water)	35.8577	-78.3665	Wake	RRO	03020201	WS-II HOW NSW	27-57-(1)	M+2SM	M	M	M		M
J5685000	Little Riv at Weaver Rd nr Bagley	ups Kenly Regional WWTP	35.5791	-78.1723	Johnston	RRO	03020201	WS-V NSW		M+2SM	M	M	M		M
J5750000	Little Riv at SR 2339 Bagley Rd nr Lowell Mill	dns Kenly	35.5613	-78.1594	Johnston	RRO	03020201	WS-V NSW	27-57-(8.5)	M+2SM	M	M	M		M
J5790000	Buffalo Ck at SR 2358 Lake Glad Rd at Wendell	City of Raleigh sampling & monitoring program	35.7697	-78.3769	Wake	RRO	03020201	C NSW		M+2SM	M	M	M		M
J5930000	Little Riv at NC 581 nr Cherry Hospital	DWR benthic station	35.3930	-78.0258	Wayne	WARO	03020201	C NSW	27-57-(22)	M+2SM	M	M	M		M
J6010950	Walnut Crk at SR 1730 Saint Johns Church Rd nr Walnut Crk	significant tributary	35.2817	-77.8686	Wayne	WARO	03020202	C NSW	27-68	M+2SM	M	M	M		M
J6024000	Neuse Riv at SR 1731 nr Seven Springs	dns Goldsboro	35.2290	-77.8460	Wayne	WARO	03020202	C NSW	27-(56)	M+2SM	M	M	M		M
J6044400	Bear Crk at SR 1603 Washington St nr LaGrange	Ups concentrated agricultural area	35.3137	-77.8153	Lenoir		03020202	C SW NSW		M+2SM	M	M	M		M
J6044500	Bear Crk at SR 1311 Bear Creek Rd nr Kinston	DWR benthic and fish station	35.2489	-77.7843	Lenoir	WARO	03020202	WS IV Sw NSW	27-72-(5)	M+2SM	M	M	M		M
J6055000	Mosley Crk at SR 1327 Willey Measley Rd nr LaGrange	dns LaGrange WWTP	35.3119	-77.7313	Lenoir	WARO	03020202	C Sw NSW	27-77-2	M+2SM	M	M	M		M
J6150000	Neuse Riv at NC 11 at Kinston	DWR ambient station, ups Kinston WWTPs, USGS gage	35.2587	-77.5835	Lenoir	WARO	03020202	C NSW	27-(75.7)	M+2SM	M	M	M		M
J6250000	Neuse Riv at NC 55 nr Graingers	dns both Kinston WWTPs, ups DuPont	35.2957	-77.4962	Lenoir	WARO	03020202	C NSW	27-(75.7)	M+2SM	M	M	M		M
J6410000	Little Crk at NC 97 at Zebulon	ups Little Creek (Raleigh) WWTP	35.8279	-78.3025	Wake	RRO	03020203	C NSW	27-86-2-4	M+2SM	M	M	M		M
J6450000	Little Crk at NC 39 at Zebulon	dns Little Creek (Raleigh) WWTP	35.8125	-78.2681	Wake	RRO	03020203	C NSW	27-86-2-4	M+2SM	M	M	M		M
J6500000	Moccasin Crk at SR 1131 Antioch Church Rd nr Conner	ups Buckhorn Res.	35.7301	-78.1895	Wilson	RRO	03020203	C NSW	27-86-2	M+2SM	M	M	M		M

Station Number	Location Description	Station Comments	Latitude	Longitude	County	Region	8 Digit HUC	Stream Class	Index	¹ Field Measurements	² Nutrients	Lab Turbidity	TSS	Chl-a	Fecal Coliform
J6680000	Turkey Crk at SR 1101 Claude Lewis Rd nr Middlesex	ups Buckhorn Res.	35.7519	-78.1597	Nash	RRO	03020203	C NSW	27-86-3- (1)	M+2SM	M	M	M		M
J6765000	Contentnea Crk at Willow Springs Dr nr Dixie	ups Wilson WWTP, dns Wiggins Mill Reservoir	35.6838	-77.9410	Wilson		03020203	C Sw NSW		M+2SM	M	M	M		M
J6890000	Contentnea Crk at SR 1622 Evansdale Rd nr Wilson	dns Wilson WWTP	35.6429	-77.8902	Wilson	RRO	03020203	C Sw NSW	27-86-(7)	M+2SM	M	M	M		M
J7210000	Contentnea Crk at NC 58 nr Stantonburg	DWR benthic station	35.5861	-77.8111	Wilson	RRO	03020203	C Sw NSW	27-86-(7)	M+2SM	M	M	M		M
J7240000	Toisnot Swamp at SR 1539 Sand Pit Rd nr Stantonburg	major trib to Contentnea Crk	35.5976	-77.7947	Wilson	RRO	03020203	C Sw NSW	27-86-11-(5)	M+2SM	M	M	M		M
J7325000	Nahunta Swamp at NC 58 nr Contentnea	major trib to Contentnea Crk	35.5081	-77.7455	Greene	WARO	03020203	C Sw NSW	27-86-14	M+2SM	M	M	M		M
J7330000	Contentnea Crk at US 13 at Snow Hill	ups Snow Hill WWTP	35.4585	-77.6753	Greene	WARO	03020203	C Sw NSW	27-86-(7)	M+2SM	M	M	M		M
J7690000	Little Contentnea Crk at SR 1218 Chinquapin Rd nr Farmville	ups Farmville WWTP	35.5881	-77.5416	Pitt	WARO	03020203	C Sw NSW	27-86-26	M+2SM	M	M	M		M
J7740000	Little Contentnea Crk at SR 1110 Highway 903 at Scurfleton	ups of Contentnea Crk, discontinued USGS gage	35.4567	-77.4854	Pitt	WARO	03020203	C Sw NSW	27-86-26	M+2SM	M	M	M		M
J7850000	Neuse Riv at SR 1470 Maple Cypress Rd nr Fort Barnwell	dns Contentnea Crk and Contentnea Crk WWTP, ups New Bern WWTP, USGS gage, DWR ambient station, AMS sampled at boat dock, CWP station samples from bridge	35.3139	-77.3030	Craven	WARO	03020202	C Sw NSW	27-(85)	M+2SM	M	M	M	M	M
J8870000	Trent Riv at E Front St at New Bern	confluence of Neuse and Trent Rivers	35.1016	-77.0371	Craven	WARO	03020204	SB Sw NSW	27-101-(39)	M+2SM	M	M	M	M ²	M

1. Field Measurements include: Temperature, Dissolved Oxygen, pH, and Conductivity. M=Monthly, M+2SM=Monthly with twice monthly summer sampling, Q=Quarterly. Summer includes the months of May, June, July, August and September. Twice monthly samples are to be collected at least ten days apart except when extenuating conditions arise.

2. Nutrient sampling includes: Ammonia as N (NH3), Nitrate/Nitrite as N (NO2/NO3), Total Kjeldahl Nitrogen (TKN), and Total Phosphorus as P (TP).

APPENDIX A
SAMPLE COLLECTION AND ANALYSIS

Sample Collection Procedures

Sample collection shall be performed by trained personnel employed by NC DWR-certified laboratories in accordance with the DWR Monitoring Coalition Program Field Monitoring Guidance Document (November 2017) and subsequent documents. The Field Monitoring Guidance Document can be found on the web at: <http://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/ecosystems-branch/monitoring-coalition-program>. 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 (40 CFR part 136) or other methods certified by the DWR Laboratory Certification Branch (<http://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch>) or the Director of DWR. 40 CFR Part 136 can be accessed on the web at <http://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/rules-regulations>.

Reporting levels will be at least as stringent as the reporting levels used by the DWR Laboratory. For guidance purposes Table 3 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 3
DWR 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		Report results to the nearest 0.1 pH units.
Specific Conductivity		Report results to the nearest whole $\mu\text{mho/cm}$ 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 $\mu\text{g/L}$	Report Chlorophyll <i>a</i> values free from pheophytin and other chlorophyll pigments. Analysis by HPLC is not approved by DWR.
Ammonia (NH ₃ 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	
Hardness	1.0 mg/L	

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 4. Review the data remark codes at least annually and utilize the most current set, as codes are subject to change. Contact the Coalition Coordinator for a current copy of the codes.

Table 4
Data Qualification Codes for Use with Coalition Data

Symbol	Definition
A	<p>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, coliform or acute/chronic metals reporting since averaging multiple results for these parameters is fundamental to those methods or manner of reporting.</p> <p>1 The reported value is an average, where at least one result is qualified with a "U". The PQL is used for the qualified result(s) to calculate the average.</p>
B	<p>Results 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 colonies exceeds the ideal ranges indicated by the method. These ideal ranges are defined in the method as: <i>Fecal coliform or Enterococcus bacteria: 20-60 colonies Total coliform bacteria: 20-80 colonies</i></p> <p>1 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>2 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).</p> <p>3 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.</p> <p>4 Filters have counts of both >60 or 80 and <20. Reported value is estimated or is a total of the counts on all filters reported per 100 ml.</p> <p>5 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 or enterococcus 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>6 Estimated Value. Blank contamination evident.</p> <p>7 Many non-coliform or non-enterococcus colonies or interfering non-coliform or non-enterococcus growth present. In this competitive situation, the reported value may under- represent actual density.</p> <p><u>Note:</u> A "B" value shall be accompanied by justification for its use denoted by the numbers listed above (e.g., B1, B2, etc.). Note: A "J2" should be used for spiking failures.</p>
C	<p>Total residual chlorine was present in sample upon receipt in the laboratory; value is estimated. Generally, applies to cyanide, phenol, NH3, TKN, coliform, and organics.</p>

Symbol	Definition
G	<p>A single quality control failure occurred during biochemical oxygen demand (BOD) analysis. The sample results should be used with caution.</p> <ol style="list-style-type: none"> 1 The dissolved oxygen (DO) depletion of the dilution water blank exceeded 0.2 mg/L. 2 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. 3 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. 4 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. 5 The glucose/ glutamic acid standard exceeded the range of 198 ± 30.5 mg/L. 6 The calculated seed correction exceeded the range of 0.6 to 1.0 mg/L. 7 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. 8 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. 9 The DO depletion of the dilution water blank produced a negative value. The cBOD value is greater than the BOD value. <p>Note: A "G" value shall be accompanied by justification for its use denoted by the numbers listed above (e.g., G1, G2, etc.).</p>
J	<p>Estimated value; value may not be accurate. This code is to be used in the following instances:</p> <ol style="list-style-type: none"> 1 Surrogate recovery limits have been exceeded. 2 The reported value failed to meet the established quality control criteria for either precision or accuracy. 3 The sample matrix interfered with the ability to make any accurate determination. 4 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, etc.). 5 Temperature limits exceeded (samples frozen or $>6^{\circ}\text{C}$) during transport or not verifiable (e.g., no temperature blank provided): non-reportable for NPDES compliance monitoring. 6 The laboratory analysis was from an unpreserved or improperly chemically preserved sample. The data may not be accurate. 7 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. 8 Temperature limits exceeded (samples frozen or $>6^{\circ}\text{C}$) during storage, the data may not be accurate. 9 The reported value is determined by a one-point estimation rather than against a regression equation. The estimated concentration is less than the laboratory PQL and greater than the laboratory method detection limit. 10 Unidentified peak; estimated value. 11 The reported value is determined by a one-point estimation rather than against a regression equation. The estimated concentration is less than the laboratory PQL and greater than the instrument noise level. This code is used when an MDL has not been established for the analyte in question. 12 The calibration verification did not meet the calibration acceptance criterion for field parameters. <p>Note: A "J" value shall be accompanied by justification for its use denoted by the numbers listed above (e.g., J1, J2, etc.). A "J" value shall not be used if another code applies (e.g., N, V, M).</p>
M	<p>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.</p>

Symbol	Definition
N	Presumptive evidence of presence of material; estimated value. This code is to be used if: <ol style="list-style-type: none"> 1 The component has been tentatively identified based on mass spectral library search. 2 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). 3 This code shall be used if the level is too low to permit accurate quantification, but the estimated concentration is less than the laboratory PQL and greater than the laboratory method detection limit. This code is not routinely used for most analyses. 4 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. 5 The component has been tentatively identified based on a retention time standard.
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. <ol style="list-style-type: none"> 1 Holding time exceeded prior to receipt by lab. 2 Holding time exceeded following receipt by lab.
P	Elevated PQL due to matrix interference and/or sample dilution.
S	Not enough sample provided to prepare and/or analyze a method-required matrix spike (MS) and/or matrix spike duplicate (MSD).
U	Indicates that the analyte was analyzed for, but not detected above the reported PQL. The number value reported with the "U" qualifier is equal to the laboratory's PQL*.
UU	Indicates that the analyte was not detected by a screen analysis. The number value reported with the "UU" qualifier is equal to the laboratory's PQL. The number value was determined by a one-point estimation at the PQL, rather than against a regression equation.
V	Indicates the analyte was detected in both the sample and the associated blank. Note: The value in the blank shall not be subtracted from the associated samples. <ol style="list-style-type: none"> 1 The analyte was detected in both the sample and the method blank. 2 The analyte was detected in both the sample and the field blank.
X	Sample not analyzed for this constituent. This code is to be used if: <ol style="list-style-type: none"> 1 Sample not screened for this compound. 2 Sampled, but analysis lost or not performed-field error. 3 Sampled, but analysis lost or not performed-lab error. <p>Note: an "X" value shall be accompanied by justification for its use by the numbers listed.</p>
Y	Elevated PQL due to insufficient sample size.
Z	The sample analysis/results are not reported due to: <ol style="list-style-type: none"> 1 Inability to analyze the sample. 2 Questions concerning data reliability. <p>Note: The presence or absence of the analyte cannot be verified.</p>
Supporting Definitions listed below	
MDL	A Method Detection Limit (MDL) is defined as the minimum concentration of a substance that can be measured and reported with 99 percent confidence that the true value is greater than zero and is determined in accordance with 40 CFR Part 136, Appendix B.
ML	Minimum Levels are used in some EPA methods. A Minimum Level (ML) is the lowest level at which the entire analytical system must give a recognizable signal and acceptable calibration point for the analyte. It is equivalent to the concentration of the lowest calibration standard, assuming that all method - specified sample weights, volumes, and cleanup procedures have been employed. The ML is calculated by multiplying the MDL by 3.18 and rounding the result to the nearest factor of 10 multiple (i.e., 1, 2, or 5). For example, MDL = 1.4 mg/L; ML = 1.4 mg/L x 3.18 = 4.45 rounded to the nearest factor of 10 multiple (i.e., 5) = 5.0 mg/L.

Supporting Definitions listed below

PQL	The Practical Quantitation Limit (PQL) is defined as the lowest concentration that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions. PQLs are subjectively set at some multiple of typical MDLs for reagent water (generally 3 to 10 times the MDL depending upon the parameter or analyte and based on the analyst's best professional judgement, the quality and age of the instrument and the nature of the samples) rather than explicitly determined. PQLs may be nominally chosen within these guidelines to simplify data reporting and, where applicable, are generally equal to the concentration of the lowest non-zero standard in the calibration curve. PQLs are adjusted for sample size, dilution and % moisture. For parameters that are not amenable to MDL studies, the PQL may be defined by the sample volume and buret graduations for titrations or by minimum measurement values set by the method for method-defined parameters (e.g., BOD requires a minimum DO depletion of 2.0 mg/L, fecal coliform requires a minimum plate count of 20 cfu, total suspended residue requires a minimum weight gain of 2.5 mg, etc.). Additionally, some EPA methods prescribe Minimum Levels (MLs) and the lab may set the PQL equal to this method-stated ML. Determination of PQL is fully described in the laboratory's analytical Standard Operating Procedure (SOP) document.
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*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 May 4, 2018.

APPENDIX B

DATA FORMAT AND REPORTING REQUIREMENTS

Data Format for Monthly submittals:

Table 5 provides the format of a data submittal spreadsheet. **It is very important that the format of the headings and the number and order of columns is consistent among all monthly submissions.** Do not use commas, tabs, or other common file delimiters anywhere in the submittal spreadsheet table. Do not add, delete, or hide any rows or columns. The first row should contain the column headings only. Column headings must include appropriate information on measurement units (e.g., mg/L, µg/L, cfu/100mL, etc.). The second row must contain the method code. 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 5. 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 LNBA will be required to submit an annual report by April 30th for each year the MOA is in effect. The annual report will formally summarize all data collection activities in the past calendar year and contain at least 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 LNBA 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 numbers.
- 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 LNBA's website address.

