Comment No.	Agency	Date Received	Comment	Response
1	NCDEQ	11/20/19	**Sample Data for the River's moving bedload and estimates of its contaminant flux will be more valuable if compared with an estimated flux for the water column.** The plan should include water grab samples at each of the three sediment locations at some or all the proposed transects. Given that concentrations of suspended fine sediment and of small organisms can vary with depth, samples could be collected a foot or two above the sediment interface, and midway through the water column. Water flow data is on record; estimates of sediment flux in the River system should be available, potentially from the US Army Corps of Engineers.	Surface water samples will be collected from sediment transects. Two samples will be collected from each central transect location (16 total samples): one sample from a depth of one to two feet above the sediment surface and the second sample from the midpoint of the water column.
2	NCDEQ	11/20/19	**Pore water Analysis.** Exposure to porewater can be a main route of uptake for some aquatic and benthic species. Add pore water samples to the sampling plan.	At this time, the focus of the Phase 1 Assessment is to assess bulk sediment concentrations. The assessment is expected to provide valuable information on the spatial distribution of Table 3+ PFAS in sediments and inform sediment characteristics that may correlate with higher Table 3+ PFAS concentrations in sediment (e.g. percent fines, organic carbon content). Porewater sampling will be considered under a future potential Phase 2 Assessment which would be informed by the bulk sediment characterization data which will be used to refine areas where porewater sampling may be most valuable to understand potential exposures.
3	NCDEQ	11/20/19	**Employ sampling methods that minimize the loss of pore water.** Typically, ponar dredges allow pore water to drain from the sediments as they are hauled into the boat, particularly for coarser sediment, such as the sand likely to be encountered in this study. Other methods of sampling should be considered and employed.	This investigation is targeting sediments to an approximate depth of six inches; the ponar was selected based on its ability to sample the desired depth interval. Quality measures will be in place to assess the retrieved sample prior to accepting the sample. The ponar will be outfitted with flaps to prevent overlying surface water from passing through the sampler as it is withdrawn from the water column. The sample in the recovered ponar will be inspected after it is collected and prior to removal from the ponar. If the ponar has not completely closed, the sample will be rejected. The flaps will be lifted and the surface of the sample inspected to verify washout has not occurred. The sample will be recollected if it does not pass inspection.
4	NCDEQ	11/20/19	**Planned transects will not likely provide samples that represent significant ranges of particle size or organic carbon content.** Inorganic and organic compounds' concentration typically correlate systematically with, and can vary dramatically with, particle size, clay content and organic carbon content. The plan includes analysis for particle size and organic carbon and states that "By collecting samples along a transect from each location, analytical results will be correlated with a range of sediment transport environments (depositional and erosional) and from a range of physical and chemical sediment environments (e.g., potential variation in particle size and organic content to be analyzed according to Table 3." However: a) During normal flow conditions the River is typically narrowly confined between vertical banks over most of its length, particularly above Elizabethtown. This results in high velocities, and a bedload likely dominated by sand with relatively little silt, clay or organic material, and likely small amounts of deposition occurs regardless of location within most proposed sample transects. b) This is generally known to be the case even in the lower Cape Fear River, where velocities slow, and floodplain and depositional areas widen. This has been seen during evaluation of channel sediment samples near the Navassa Kerr-McGee site and the Sutton Steam Plant.	Sediment sample transects will be located in areas where fine-grained, high organic content sediment is expected in at least one sample along each transect. Sample transects will be selected based on field reconnaissance. While the River is channelized, a thalweg is present, and the fastest velocity and largest volume of water will move through the thalweg. There are also areas of each transect that are shallower and flatter as compared to the thalweg; slower moving water is expected in these areas, and fine-grained, high organic content sediment may be present in these areas associated with slower flows. Where possible, sampling transects will be located in areas where U.S. Fish and Wildlife Service (FWS) has identified wetlands within the Cape Fear River as presented in their Mapper (https://www.fws.gov/wetlands/data/mapper.html). Where possible, sampling transects will be positioned around meanders such that one sample in the transect is located in a depositional area on the inside of the meander (i.e. point bar). Transects locations will be field-inspected for fine grained material. Samples targeting fine-grained sediment will be field screened for fines (#200 sieve). Sampling locations may be adjusted up to six times in the vicinity of the proposed samples to locate a transect in an area where one sample contains at least 20% fines. If locations with 20% fines (silt + clay) are not found within the original 8 planned transects, up to 2 locations will be added or moved to further attempt to sample fine-grained material.
5	NCDEQ	11/20/19	**The Plan should include targeted samples of finer-grained, organic rich sediments from peripheral wetlands that occur locally adjacent to the River's banks**. A number of locations would be nominally assigned to areas as near as practicable to each proposed transect, but would be chosen after field inspection of targeted wetlands and of the sediment itself. Provide additional sample locations in the areas near and below Elizabethtown, where the flood plain is wider, given a higher likelihood of sampling material deposited prior to 2017. These samples will improve the understanding of the relationships between contaminant concentrations and particle size and organic carbon content.	Addressed above in response to Comment #4.
6	NCDEQ	11/20/19	**Results from the peripheral wetland samples could point to the need for more information about the mass of PFAS compounds sequestered in wetlands and depositional areas of the River system**. Available downstream river water samples suggest a short residence time for those compounds in the active channel, but this can be explained by the short residence time of moving water and suspended fine matter in the system, particularly if the River's sandy active bedload does not sorb much contaminant. However, the River's wetland and depositional areas: c) might have orders of magnitude greater concentrations of contaminants than the River's coarser channel bedload, on the basis of particle size and organic content. d) Might sequester a significant fraction of the contaminants released over the history of the Fayetteville Works facility. e) Might have contaminant concentrations that are ecologically significant. f) Might be subject to erosion and contaminant release to the water column during high flow events. Though episodic, these events would be of concern to downstream users. Provide additional samples to the few black mud samples to this study to determine the impact to the wetlands.	Addressed above in response to Comment #4.
7	NCDEQ	11/20/19	**Sediment reporting levels**. Sediment reporting levels on page 19 are higher than desired. Similarly high reporting levels were used for the soil analysis in the Onsite Offsite Assessment (required under paragraph 18). Explain the reason for these elevated RLs and make attempts to reduce RLs. All PFAS listed in Table 1 as "Table 3+ SOP" have reporting levels of 1 ng/g (1,000 ng/Kg). In contrast, the work done under the Onsite Offsite Assessment employed an RL of 250 ng/Kg for HFPO-DA and 1,000 ng/Kg for the of these PFAS. In addition, DEQ has conducted soil sampling and GEL and EPA labs have achieved lower RLs ranging from approximately 50-650 ng/Kg for most PFAS.	The RLs provided are the lowest presently available from commercial laboratories that have worked with Chemours to develop reliable, demonstrated methods for analyzing Table 3+ samples. Chemours continues to work with its laboratory partners to improve the method and lower RLs. Note that with respect to the previous version of Table 1: 1) RLs for Table 3 compounds have been adjusted slightly to reflect+A1 current laboratory RLs, 2) HFPO-DA is now listed under Method 537 Mod only, and 3) NEtPFOSA, NEtPFOSAE, NMePFOSA, NMePFOSAE have moved from the Table 3 method to the 537 method for TestAmerica.
8	NCDEQ	11/20/19	**Provide PQLs in Table 1 - PFAS and Associate Methods**. Table 1 indicates the Soil/Sediment Practical Quantitation Limit (PQL) for several analytes for the Eurofins Lancaster lab as TBD - "PQL is to be determined." Please provide the PQLs for the remaining analytes.	As of January 2020, Eurofins Lancaster is not offering Table 3+ analysis of soils and sediments. Table 1 has been updated with this information.