

# Request for Categorical Exclusion from Substantive Environmental Review

## Instructions:

1. Provide the DEH number for the project for which you are requesting consideration.
2. Please fill out the applicant's formal name. If you are a county authority, please specify which county. "County Water District VII" is not an acceptable name; "ABC County Water District VII" is acceptable.
3. Please check all applicable exclusions. Failure to check an applicable exclusion will result in the rejection of your request.
4. Either the "authorized representative," or the Professional Engineer responsible for the PER must sign the form. If the PE signs the form, it must include the PE seal.

DEH No.: TBD 1628

Applicant: **Onslow Water and Sewer Authority**

## Project Description

Water produced at the WTP serves ONWASA's Dixon Region. Water supply is generated from 6 groundwater supply wells in the Dixon Region from the Castle Hayne aquifer. ONWASA staff and customers have noted plating on glassware and porcelain that comes into contact with water produced at the Dixon WTP. It is believed that silica in the water supply originating in the WTP's raw water is causing the plating. Customer complaints are consistent within the Dixon WTP service area, and new customer complaints occur in areas where Dixon water was recently extended or provided. Based on sampling results, silica is present at all of the Dixon WTP supply wells and ranges in concentrations from 46 to 56 mg/l total silica. Through the Dixon WTP processes, both total and reactive silica levels range from 48 to 53 mg/l. Generally, greater than 95% of the total silica found in the system is reactive silica. Throughout the Dixon WTP service area, silica levels range from 44 to 51 mg/l total silica. The Dixon WTP will be subject to forthcoming disinfection byproduct (DBP) regulations requiring the reduction in Total Organic Carbon (TOC) to 2 mg/l. Current Dixon WTP TOC levels are 10 mg/l, and this reduction must take place in advance of the 2012 DBP regulations. In the future, the Dixon supply wells may be subject to saltwater intrusion, so the addition of membrane treatment at the Dixon WTP allows for both TOC removal and chloride ion removal.

Considering its small footprint and ability to fit up to 10 mgd of additional treatment capacity at the Dixon WTP in existing vacant space, the use of membrane treatment was recommended in the study to solve:

- the current need of silica removal,
- the near future need of TOC removal, and
- the potential future need of salt removal (saltwater intrusion is present along some North Carolina coastal wells including those in Onslow County).

Membrane selection was considered in the study, and ultimately a reverse osmosis (RO) membrane was selected to remove silica from the water supply. For operational flexibility during low-flow periods, three 1-mgd RO trains are proposed with the remaining 1 mgd continuing through the plant's current treatment process with minor modifications. The 3 mgd from the RO trains and the 1 mgd from current train will be blended back together before reaching the Dixon WTP's high service pumps so that hardness is brought back into the effluent prior to distribution to customers. The concept of treating 3 mgd by membrane process and blending that water with 1 mgd of water passing through the current treatment process also serves to reduce the construction cost of the proposed improvements.

We certify that the project described in the application for state-supplied financial assistance meets all of the applicable general criteria listed in 15A NCAC 01C .0408 (1), and consists solely of activities exempted under the specific criteria of 15A NCAC 01C .0408 (2) checked below:

## Please Check all the Exclusion(s) that apply

- Potable water systems including the construction or rehabilitation of wells for water supply purposes with associated groundwater withdrawals of less than 1,000,000 gallons per day where such withdrawals are not expected to cause alterations in established land use patterns, or degradation of groundwater or surface water quality.

[15A NCAC 01C .0408 (2)(c)].

Other potable water systems including the following:

- Improvements to water treatment plants that involve less than 1,000,000 gallons per day added capacity and total design withdrawal less than one-fifth of the 7-day, 10-year low flow of the contributing stream; [15A NCAC 01C .0408 (2)(b)(i)]
- Improvements not intended to add capacity to the facility; [15A NCAC 01C .0408 (2)(b)(ii)]
- Installation of waterlines and appurtenances in existing rights-of-way for streets or utilities, or water lines and appurtenances less than five miles in length and having only directional bore stream crossings or no stream crossings; [NCGS. § 113A-12(1) & 15A NCAC 01C .0408 (2)(b)(iii)]
- Construction of water tanks, or booster pumping or secondary or remote disinfection stations; [15A NCAC 01C .0408 (2)(b)(iv)]
- Dams less than 25 feet in height and having less than 50 acre-feet or storage capacity [15A NCAC 01C .0408 (2)(h)] (Notes: #1 Dam projects are ineligible for federally recognized CE. #2 Only off-stream raw water reservoirs for pre-treatment purposes are eligible for SRF funding.)

We further certify that the project does not have a significant direct, indirect, cumulative or secondary adverse environmental impact as described in 15A NCAC 01C .0306, and that none of the following descriptions apply to the project:

- the proposed activity may have a potential for significant adverse effects on wetlands; surface waters such as rivers, streams and estuaries; parklands; game lands; prime agricultural or forest lands; or areas of local, state or federally recognized scenic, recreational, archaeological, ecological, scientific research or historical value, including secondary impacts; or would threaten a species identified on the Department of Interior's or the state's threatened and endangered species lists; [15A NCAC 01C .0306 (1)] or
- the proposed activity could cause changes in industrial, commercial, residential, agricultural, or silvicultural land use concentrations or distributions which would be expected to create adverse water quality, instream flow, air quality, or ground water impacts; or affect long-term recreational benefits, fish, wildlife, or their natural habitats; [15A NCAC 01C .0306 (2)] or
- the proposed activity has secondary impacts, or is part of cumulative impacts, not generally covered in the approval process for the state action, and that may result in a potential risk to human health or the environment; [15A NCAC 01C .0306 (3)].

Therefore, we believe our project is eligible for consideration for a CE from the State's environmental assessment review processes and request that the State of North Carolina concur with our determination.

We understand that the State of North Carolina may determine that the proposed activity is of such an unusual nature or has such widespread implications that a concern for its environmental effects has been identified by DENR or expressed to DENR. We understand that, in this case, the activity may be ineligible for CE under 15A NCAC 01C .0306 (4).

We recognize that this request supplies information sufficient **only** for state-financed assistance under the 15A NCAC 01J and 01L rules. If we are applying (either additionally or exclusively) for federally-financed assistance under the Drinking Water State Revolving Fund Program, additional steps (including obtaining comment letters and publicizing the requested action) apply.

Jeff Pearson  
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 Authorized Representative Printed Name  
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 Authorized Representative Signature & Date  
 \_\_\_\_\_  
 Executive Director  
 Authorized Representative Title

State Use Only (Review)

Reviewed by: DMG

Department Approval: Armando Antonio Tomasco 9/14/2012

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