**Please use the following instructions as a checklist in order to ensure all required items are submitted. Adherence to these instructions and checking the provided boxes will help produce a quicker review time and reduce the amount of additional information requested for missing information. Failure to submit all of the required items will lead to additional processing and review time for the permit application.**

##### *For more information, visit the Water Quality Permitting Section’s Non-Discharge Permitting Unit* [*website*](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20u/15a%20ncac%2002u%20.1101.pdf)

**General** – This application is for projects involving the use of reclaimed water for the purpose of wetlands augmentation. **Unless otherwise noted, the Applicant shall submit one original and two copies of the application and supporting documentation.**

 Do not submit this application without an associated Reclaimed Water Project Information (FORM: RWPI) form.

1. **Reclaimed Water Wetlands Augmentation Form (FORM: RWWA 06-16)** (Required for all application packages):

[ ]  Submit the completed Reclaimed Water Wetlands Augmentation Application (FORM: RWWA 06-16). Please do not make any unauthorized content changes to this form. If necessary for clarity or due to space restrictions, attachments to the application may be included, provided the attachments are numbered to correspond to the section and item to which they refer.

[ ]  The project name in Item II.1. shall be consistent with the project name on the plans, specifications, agreements, etc.

[ ]  The Professional Engineer’s Certification on Page 8 of this form shall be signed, sealed and dated by a [North Carolina licensed Professional Engineer](https://ncdenr.s3.amazonaws.com/s3fs-public/Water%20Quality/Aquifer%20Protection/APS%20Policies/AquiferTestingPolicy-20070531.pdf).

[ ]  The Applicant’s Certification on Page 8 of this form shall be signed in accordance with [15A NCAC 02T .0106(b)](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20u/15a%20ncac%2002u%20.0701.pdf). The application must be signed by a principal executive officer of at least the level of vice-president or his authorized representative **for a corporation**; by a general partner **for a partnership or limited partnership;** by the proprietor **for a sole proprietorship**; and by either an executive officer, an elected official in the highest level of elected office, or other authorized employee **for a municipal, state, or other public entity**. An alternate person may be designated as the signing official if a delegation letter is provided from a person who meets the criteria in [15A NCAC 02T .0106(b)](https://ncdenr.s3.amazonaws.com/s3fs-public/Water%20Quality/Aquifer%20Protection/APS%20Policies/HydroReportPoliciesSignedMemo20070531.pdf).

[ ]  If this project is for a renewal without modification, use the [Non-Discharge System Renewal (FORM: NDSR)](https://ncdenr.s3.amazonaws.com/s3fs-public/Water%20Quality/Aquifer%20Protection/LAU/NDSR%2006-16.docx) application.

1. **Property Ownership Documentation** (Required for all application packages):

[ ]  Per [15A NCAC 02U .0202(f)](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20u/15a%20ncac%2002u%20.0202.pdf), the Applicant shall provide property ownership documentation for all wetland augmentation sites. Property ownership documentation shall consist of one (or more) of the following:

[ ]  Legal documentation of ownership (i.e., [GIS](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20u/15a%20ncac%2002u%20.1101.pdf), deed or article of incorporation), or

[ ]  Written notarized intent to purchase agreement signed by both parties with a plat or survey map, or

[ ]  An easement running with the land specifically indicating the intended use of the property and meeting the requirements of [15A NCAC 02L .0107(f)](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20u/15a%20ncac%2002u%20.0801.pdf), or

[ ]  A written notarized lease agreement signed by both parties, indicating the intended use of the property, as well as a plat or survey map.

1. **Reclaimed Water Metals Analysis** (Required for new wetland augmentation systems or new reclaimed water sources to existing augmentation systems):

[ ] [ ]  Per [15A NCAC 02U .1101(d)(3)](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20u/15a%20ncac%2002u%20.1101.pdf) provide analysis from a certified laboratory documenting that the reclaimed water to be used for wetlands augmentation does not exceed the North Carolina surface water quality standards for metals in accordance with [15A NCAC 02B .0200](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20b/subchapter%20b%20rules.pdf). For new treatment facilities, an analysis from a similar facility’s effluent is acceptable. The following parameters must be included (See Application Item IV.2.):

|  |  |  |
| --- | --- | --- |
| [ ] [ ]  Arsenic | [ ] [ ]  Barium | [ ] [ ]  Beryllium |
| [ ] [ ]  Cadmium | [ ] [ ]  Chromium (total) | [ ] [ ]  Copper |
| [ ] [ ]  Iron | [ ] [ ]  Lead | [ ]  [ ] Mercury |
| [ ] [ ]  Nickel | [ ] [ ]  Silver | [ ] [ ]  Zinc |
| [ ] [ ]  Hardness |  |  |

1. **Soil Evaluation – NON-CONJUNCTIVE SYSTEMS – (**Non-conjunctive use means that the reclaimed water utilization activity is required to meet the wastewater disposal needs of the generating facility.) A soil evaluation is required for application packages that include new or expanding wetland augmentation areas.

[ ] [ ]  Per [15A NCAC 02U .0202(b)](http://www.ncnhp.org/), submit a soil evaluation of the wetland augmentation area(s) that has been signed, sealed and dated by a [North Carolina Licensed Soil Scientist](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20u/15a%20ncac%2002u%20.0402.pdf) and includes at a minimum:

[ ]  The report shall identify all the proposed wetland augmentation areas with project name, location, and include a statement that the areas were recommended for the proposed reclaimed water augmentation activity.

[ ]  A field description of soil profile, based on examinations of excavation pits and auger borings, within seven feet of the land surface or to bedrock describing the following parameters by individual diagnostic horizons:

|  |  |  |
| --- | --- | --- |
| [ ] [ ]  Thickness of horizon | [ ] [ ]  Texture | [ ] [ ]  Color and other diagnostic features |
| [ ] [ ]  Structure | [ ] [ ]  Internal drainage | [ ] [ ]  Depth, thickness, and type of restrictive horizon(s) |
| [ ] [ ]  Presence or absence and depth of evidence of seasonal high water table (SHWT) |

[ ]  Provide all soil boring logs performed at the site.

[ ]  Annual hydraulic loading rates shall be based on in-situ measurements of saturated hydraulic conductivity in the most restrictive horizon for each soil mapping unit.

[ ]  Maximum reclaimed water application rate (inches/year) for each wetland area.

[ ]  A representative soils analysis (Standard Soil Fertility Analysis) conducted on each wetland augmentation site. The Standard Soil Fertility Analysis shall include the following items:

|  |  |  |
| --- | --- | --- |
| [ ] [ ]  Acidity | [ ] [ ]  Exchangeable sodium percentage (by calculation) | [ ] [ ]  Phosphorus |
| [ ] [ ]  Base saturation (by calculation) | [ ] [ ]  Magnesium | [ ] [ ]  Potassium |
| [ ] [ ]  Calcium | [ ] [ ]  Manganese | [ ] [ ]  Sodium |
| [ ] [ ]  Cation exchange capacity | [ ] [ ]  Percent humic matter | [ ] [ ]  Zinc |
| [ ] [ ]  Copper | [ ] [ ]  pH |  |

[ ]  A soil map delineating soil mapping units within each wetland augmentation site and showing all physical features, location of pits and auger borings, legends, scale, and north arrow.

[ ]  Note: Guidance on completing soil evaluations for non-conjunctive reclaimed water systems is provided in the [Soil Scientist Evaluation Policy](https://ncdenr.s3.amazonaws.com/s3fs-public/Water%20Quality/Aquifer%20Protection/APS%20Policies/SoilsEvaluationPolicy-20080912.pdf).

1. **Soil Evaluation - CONJUNCTIVE SYSTEMS - (**Conjunctive use means that the reclaimed water utilization option is not required to meet the wastewater disposal needs of the generating facility, and that other permitted utilization/disposal alternatives are also available.) A soil evaluation is required for application packages that include new or expanding wetland augmentation areas.

[ ]  Per [15A NCAC 02U .0201(b)](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20u/15a%20ncac%2002u%20.0201.pdf), submit a soil evaluation of the utilization area(s) that has been signed, sealed and dated by a [North Carolina Licensed Soil Scientist](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20u/15a%20ncac%2002u%20.1101.pdf) and meets the following criteria:

[ ]  The report shall identify all the proposed wetland augmentation areas with project name, location, and include a statement that the areas were recommended for the proposed reclaimed water augmentation activity.

[ ]  Soil evaluation recommendations shall include at a minimum:

[ ]  Maximum reclaimed water application rate for each wetland area (inches/year).

[ ]  Seasonal irrigation restrictions.

[ ]  Recommended annual reclaimed water application rate (gal/yr) for each soil/map unit within the proposed augmentation area(s).

1. **Hydrogeologic Evaluation** (Required for all facilities treating industrial waste, and new application packages with design flows over 25,000 GPD, or modifications involving increasing the total design flow to over 25,000 GPD)

[ ]  Per [15A NCAC 02U .0202(e)](http://deq.nc.gov/about/divisions/water-resources/water-resources-permits/wastewater-branch/non-discharge-permitting), submit a detailed hydrogeologic investigation that has been signed, sealed and dated by a [North Carolina Licensed Geologist](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20u/15a%20ncac%2002u%20.0201.pdf), a [North Carolina Licensed Soil Scientist](http://ncblss.org/lss-directory.pdf) or a [North Carolina licensed Professional Engineer](https://www.membersbase.com/ncbels-vs/public/searchdb.asp) and includes at a minimum:

[ ]  A description of the regional and local geology and hydrogeology based on research of literature for the area;

[ ]  A description, based on field observations of the site, topographic setting, streams, springs, and other groundwater discharge features, drainage features, existing and abandoned wells, rock outcrops, and other features that may affect the movement of treated wastewater;

[ ]  Changes in lithology underlying the site;

[ ]  Depth to bedrock and occurrence of any rock outcrops;

[ ]  The hydraulic conductivity and transmissivity of the affected aquifer(s);

[ ]  Depth to the seasonal high water table;

[ ]  A discussion of the relationship between the affected aquifers of the site to local and regional geologic/hydrogeologic features;

[ ]  A discussion of the groundwater flow regime of the site prior to operation of the proposed facility and post operation of the proposed facility focusing on the relationship of the system to groundwater receptors, groundwater discharge features, and groundwater flow media;

[ ]  A mounding analysis to predict the level of the seasonal high water table after reclaimed water augmentation.

[ ]  Note: Guidance on completing Hydrogeologic Evaluations is provided in the [Hydrogeologic Investigation and Reporting Policy](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20u/15a%20ncac%2002u%20.0402.pdf), the [Groundwater Modeling Policy](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20u/15a%20ncac%2002u%20.0402.pdf), and the [Performance and Analysis of Aquifer Slug Tests and Pumping Tests Policy](https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-quality-program-development/unique-wetlands).

1. **Hydrogeologic Model**: (Required for all sites, regardless of flow rate, where the reclaimed water to be applied exhibits concentrations greater than 100% of the groundwater standards – See Application Item IV.1.):

[ ]  Per [15A NCAC 02U .1101(b)(10)](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20u/subchapter%20u%20rules.pdf),submit a site specific Hydrogeologic modeling investigation that has been signed, sealed and dated by a qualified professional and includes at a minimum:

[ ]  Evaluation of wetland/groundwater interaction;

[ ]  Determination of groundwater recharge/discharge areas that would be affected by the proposed application of reclaimed water;

[ ]  Gradient;

[ ]  Location of all water supply wells within a 500-foot radius of the proposed reclaimed water application area(s);

[ ]  Verify that hydrogeologic conditions are adequate to prevent degradation of groundwater quality; and

[ ]  Demonstrate through hydrogeologic modeling or predictive calculations that groundwater standards will not be exceeded at the compliance boundary.

[ ]  Note: Guidance on completing Hydrogeologic Evaluations is provided in the [Hydrogeologic Investigation and Reporting Policy](https://ncdenr.s3.amazonaws.com/s3fs-public/Water%20Quality/Aquifer%20Protection/APS%20Policies/HydroReportPoliciesSignedMemo20070531.pdf) and the [Groundwater Modeling Policy](https://ncdenr.s3.amazonaws.com/s3fs-public/Water%20Quality/Aquifer%20Protection/APS%20Policies/GroundwaterModelingPolicy-20070531.pdf).

1. **Hydraulic Regime Determination** (Required for all application packages including new or expanding wetland augmentation sites)

[ ]  Per [15A NCAC 02U .1101(b)(3)](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20b/15a%20ncac%2002b%20.0101.pdf), submit a Hydraulic Regime Determination that has been signed, sealed and dated by a qualified professional and includes at a minimum:

[ ]  Depth and duration of wetland(s) inundation;

[ ]  Average monthly water level fluctuations;

[ ]  Estimated monthly water budget of existing wetlands compared to actual conditions during operation of proposed augmentation system;

[ ]  Determine whether the wetland(s) proposed for augmentation are in a groundwater discharge or groundwater recharge area.

1. **Project Evaluation and Receiver Site Agronomic Plan** (Required for all application packages that include new or expanding wetland augmentation sites.)

[ ]  Per [15A NCAC 02U .1101(b)(7)](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20u/15a%20ncac%2002u%20.1101.pdf), provide a project evaluation and receiver site agronomic plan that includes the following:

[ ]  Recommended hydraulic loading rate(s) based on the following:

[ ]  Soils report (See Instruction E);

[ ]  Hydrogeologic description (See Instruction F);

[ ]  Agronomic evaluation to determine the ability of the wetland vegetation to accept the proposed reclaimed water application rates;

[ ]  Wetland type (See Application Item V.1.);

[ ]  Local topography;

[ ]  Aquatic life (See Instruction K);

[ ]  Wildlife (See Instruction K); and

[ ]  Seasonal considerations including restrictions during times of high water table levels to ensure that depth to groundwater will be greater than or equal to one foot pursuant to [15A NCAC 02U (a)(3)](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20u/15a%20ncac%2002u%20.0403.pdf).

[ ]  Demonstrate that there will be no negative effects on the uses of the wetlands including biological criteria.

[ ]  Demonstrate that net environmental benefits will be gained as a result of the proposed wetlands augmentation activities.

1. **Water Balance - NON CONJUNCTIVE SYSTEMS ONLY** (For application packages that include new wet-weather storage units located at the wetland augmentation site, changes in flow, or changes in on-site storage):

[ ]  Per [15A NCAC 02U .0202(k)](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20u/15a%20ncac%2002u%20.0202.pdf), submit a water balance that has been signed, sealed and dated by a qualified professional and includes at a minimum:

[ ]  The water balance should be run over at least a two year iteration, should consider precipitation into and evaporation from all open atmosphere storage impoundments, and should use variable number of days per month and include:

[ ]  Precipitation based on the 80th percentile and a minimum of 30 years of observed data.

[ ]  Potential Evapotranspiration (PET) using the Thornthwaite method, or another approved methodology, using a minimum of 30 years of observed temperature data.

[ ]  Soil drainage based on the geometric mean of the in-situ KSAT tests in the most restrictive horizon and a drainage coefficient ranging from 4 to 10% (unless otherwise technically documented).

[ ]  Depth to the SHWT and lateral groundwater movement.

[ ]  Nutrient limitations and seasonal application times to ensure reclaimed water is applied at appropriate agronomic rates.

[ ]  Note: Guidance on completing a water balance for non-conjunctive systems is available in the [Water Balance Calculation Policy](http://portal.ncdenr.org/c/document_library/get_file?uuid=5f4eaf8b-1345-40b3-b768-d486b9a51ce6&groupId=38364).

1. **Baseline Monitoring** (Required for all application packages including new or expanding wetland augmentation sites)

[ ]  Per [15A NCAC 02U .1101(b)(6)](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20u/15a%20ncac%2002u%20.1101.pdf), submit baseline monitoring data that includes the following items. Baseline monitoring shall be performed for at least one year prior to beginning augmentation activities.

[ ]  **Surveys:**

**Vegetation:**

[ ]  Monitoring should follow the [Carolina Vegetation Survey (CVS)](http://cvs.bio.unc.edu/) Level 3 Protocol.

[ ]  All species with a North Carolina and/or United States status of Threatened or Endangered in the [Natural Heritage Program’s](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20u/15a%20ncac%2002u%20.0202.pdf) most recent List of Rare Plant Species of North Carolina should be included even when their percent cover falls below the threshold in the CVS Protocol.

[ ]  Include wetland indicator status of all surveyed species.

[ ]  Monitoring should be conducted during the period of the growing season that maximizes the number of identifiable species within the dominant vegetation type(s).

[ ]  Data should be stored and submitted in standards format of the CVS Program.

**Macroinvertebrates:**

[ ]  Monitoring should follow standard DWR protocols including sweep netting, stovepipe sampling, and funnel trapping.

[ ]  Macroinvertabrates should be monitored between February and March while surface water exists.

[ ]  Identification should be taken to the lowest practical level using regional taxonomic keys.

[ ]  Sampling location, date, and gear type should be recorded electronically alongside a list of all taxa found, their abundance, and associated tolerance values and habit guilds.

**Amphibians:**

[ ]  Amphibians should be monitored during the breeding season (late winter/early spring then again late spring).

[ ]  Amphibian surveys should focus on the number of species present, not the number of individuals.

**Fish:**

[ ]  If present, include a list of fish observed at the site.

**Birds:**

[ ]  Include a list of birds observed at the site.

**Threatened and Endangered (T & E) Species:**

[ ]  Examination for T & E Species shall be made during the appropriate season using data from the [Natural Heritage Program](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20u/15a%20ncac%2002u%20.1101.pdf).

[ ]  **Depth Readings:**

[ ]  Groundwater and surface water depth readings must be taken using transducers installed in monitoring wells throughout the wetland. Data should be recorded on 60 minute increments (minimum) throughout the year.

[ ]  **Water Chemistry:**

**Surface Water:**

[ ]  Monthly sampling for the following water chemistry parameters when surface water is present:

[ ]  Total Nitrogen [ ]  Conductivity

[ ]  Total Phosphorus [ ]  pH

**Groundwater:**

[ ]  Monthly sampling for the following parameters (Not required for wetlands receiving reclaimed water characterized by average annual parameter concentrations less than or equal to 50 percent of ground water standards in [15A NCAC 02L](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20u/15a%20ncac%2002u%20.0701.pdf), and less than 50 percent of required surface water discharge criteria):

[ ]  Total Nitrogen [ ]  Conductivity

[ ]  Total Phosphorus [ ]  pH

[ ]  Quarterly sampling for the following parameters (Not required for wetlands receiving reclaimed water characterized by average annual parameter concentrations less than or equal to 50 percent of ground water standards in [15A NCAC 02L](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20l/subchapter%20l%20rules.pdf), and less than 50 percent of required surface water discharge criteria):

[ ]  Arsenic [ ]  Lead

[ ]  Barium [ ]  Mercury

[ ]  Beryllium [ ]  Nickel

[ ]  Cadmium [ ]  Silver

[ ]  Chromium (total) [ ]  Zinc

[ ]  Copper [ ]  Iron

1. **Engineering** **Plans** (Required for all application packages involving new or expanding wetland augmentation sites):

[ ] [ ]  Per [15A NCAC 02U .0201](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20u/15a%20ncac%2002u%20.0201.pdf) or [.0202](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20u/15a%20ncac%2002u%20.1101.pdf), submit standard size and 11 x 17-inch plan sets that have been signed, sealed and dated by a [North Carolina licensed Professional Engineer](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20u/15a%20ncac%2002u%20.0403.pdf).

[ ] [ ]  Table of contents with each sheet numbered.

[ ] [ ]  A general location map with at least two geographic references and a vicinity map.

[ ] [ ]  Location and details of all distribution piping, pumps, valves, flow meters, etc.

[ ] [ ]  Plan and profile views of all onsite storage units including inlet and outlet (if applicable) structures.

[ ] [ ]  The wetland augmentation area with an overlay of the suitable application areas depicted in the Soil Evaluation.

[ ] [ ]  Location and details of all reclaimed water application equipment such as piping, nozzles, emitters, etc. Each application zone shall be labeled as it will be operated.

[ ] [ ]  Details of any erosion control measures to be used.

[ ] [ ]  For automated application systems, provide the location and details soil moisture sensors or other similar devices.

[ ] [ ]  Plans shall represent a completed design and not be labeled with preliminary phrases (e.g., FOR REVIEW ONLY, NOT FOR CONSTRUCTION, etc.) that indicate they are anything other than final specifications. However, the plans may be labeled with the phrase: FINAL DESIGN - NOT RELEASED FOR CONSTRUCTION.

1. **Specifications** (Required for all application packages involving new or expanding wetland augmentation sites):

[ ] [ ]  Per [15A NCAC 02U .0201](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20u/15a%20ncac%2002u%20.1101.pdf) or [.0202](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20u/15a%20ncac%2002u%20.0201.pdf), submit specifications that have been signed, sealed and dated by a [North Carolina licensed Professional Engineer](https://www.membersbase.com/ncbels-vs/public/searchdb.asp).

[ ] [ ]  At a minimum, the specifications shall include the following items:

[ ] [ ]  Table of contents with each section/page numbered.

[ ] [ ]  Detailed specifications for the proposed reclaimed water wetland augmentation system, including all distribution piping, pumps, valves, flow meters, nozzles, emitters, etc.

[ ] [ ]  Detailed specifications for any onsite storage units, including dimensions, storage volume, liner requirements, etc.

[ ] [ ]  Detailed specifications for any erosion control measures.

[ ] [ ]  Site Work (i.e., earthwork, clearing, grubbing, excavation, trenching, backfilling, compacting, fencing, seeding, etc.)

[ ] [ ]  Materials (i.e., concrete, masonry, steel, painting, method of construction, etc.)

[ ] [ ]  Electrical (i.e., control panels, transfer switches, automatically activated standby power source, etc.)

[ ] [ ] [ ]  Specifications shall represent a completed design and not be labeled with preliminary phrases (e.g., FOR REVIEW ONLY, NOT FOR CONSTRUCTION, etc.) that indicate they are anything other than final specifications. However, the specifications may be labeled with the phrase: FINAL DESIGN - NOT RELEASED FOR CONSTRUCTION.

1. **Engineering Calculations** (Required for all application packages involving new, expanding, or modified wetland augmentation sites):

[ ] [ ]  Per [15A NCAC 02U .0201](http://ncblss.org/lss-directory.pdf) or [.0202](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20t/15a%20ncac%2002t%20.0106.pdf), submit engineering calculations that have been signed, sealed and dated by a [North Carolina licensed Professional Engineer](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20u/15a%20ncac%2002u%20.0202.pdf).

[ ] [ ]  At a minimum, the engineering calculations shall include the following items as applicable:

[ ] [ ]  Total and effective storage calculations for each storage unit;

[ ] [ ]  Friction/total dynamic head calculations and system curve analysis for each pump used;

[ ] [ ]  Manufacturer’s information for all pumps, flow meters, nozzles/emitters, etc;

[ ] [ ]  Flotation calculations any storage units constructed partially or entirely below grade;

[ ] [ ]  Demonstrate that the designed daily maximum loading rates and annual loading rates do not exceed recommendations.

1. **Site Map** (Required for all application packages):

[ ] [ ]  Per [15A NCAC 02U .0201](http://ncblss.org/lss-directory.pdf) or [.0202](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20u/15a%20ncac%2002u%20.0202.pdf), submit standard size and 11 x 17-inch site maps that have been signed, sealed and dated by a [North Carolina licensed Professional Engineer and/or Professional Land Surveyor](https://www.membersbase.com/ncbels-vs/public/searchdb.asp).

[ ] [ ]  For clarity, multiple site maps of the project with cut sheet annotations may be submitted.

[ ] [ ]  At a minimum, the site map shall include the following:

[ ] [ ]  A scaled map of the wetland augmentation site with topographic contour intervals not exceeding 10 feet or 25 percent of total site relief and showing all facility-related structures and fences within reclaimed water storage and augmentation areas.

[ ] [ ]  Soil mapping units shown on all augmentation sites.

[ ] [ ]  The location of all wells (including usage and construction details if available), streams (ephemeral, intermittent, and perennial), springs, lakes, ponds, and other surface drainage features within 500 feet of all reclaimed water storage and augmentation sites.

[ ] [ ]  Setbacks as required by [15A NCAC 02U .0701](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20t/15a%20ncac%2002t%20.0106.pdf).

[ ] [ ]  Site property boundaries within 500 feet of all reclaimed water storage and augmentation sites.

1. **Ongoing Wetland Monitoring Plan** (Required for all application packages including new or expanding wetland augmentation sites)

[ ]  Per [15A NCAC 02U .1101(e)(d)](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20u/15a%20ncac%2002u%20.0202.pdf), submit a wetland monitoring plan that will be conducted during the first five years after initiation of the wetland augmentation activities. The monitoring plan shall include the following items:

[ ]  **Surveys:**

**Vegetation:**

[ ]  Monitoring should follow the [Carolina Vegetation Survey (CVS)](http://www.ncblg.org/) Level 3 Protocol.

[ ]  All species with a North Carolina and/or United States status of Threatened or Endangered in the [Natural Heritage Program’s](http://www.ncnhp.org/) most recent List of Rare Plant Species of North Carolina should be included even when their percent cover falls below the threshold in the CVS Protocol.

[ ]  Include wetland indicator status of all surveyed species.

[ ]  Monitoring should be conducted during the period of each growing season that maximizes the number of identifiable species within the dominant vegetation type(s).

[ ]  Data should be stored and submitted in standards formats of the CVS Program.

**Macroinvertebrates:**

[ ]  Monitoring should follow standard DWR protocols including sweep netting, stovepipe sampling, and funnel trapping.

[ ]  Macroinvertabrates should be monitored between February and March while surface water exists.

[ ]  Identification should be taken to the lowest practical level using regional taxonomic keys.

[ ]  Sampling location, date, and gear type should be recorded electronically alongside a list of all taxa found, their abundance, and associated tolerance values and habit guilds.

**Amphibians:**

[ ]  Amphibians should be monitored during the breeding season (late winter/early spring then again late spring).

[ ]  Amphibian surveys should focus on the number of species present, not the number of individuals.

**Fish:**

[ ]  If present, include a list of fish observed at the site.

**Birds:**

[ ]  Include a list of birds observed at the site.

**Threatened and Endangered (T & E) Species:**

[ ]  Examination for T & E Species shall be made during the appropriate season using data from the [Natural Heritage Program](http://www.ncnhp.org/).

[ ]  **Water Monitoring:**

**Groundwater:**

[ ]  Monthly sampling for the following water chemistry parameters:

[ ]  Total Nitrogen [ ]  Conductivity

[ ]  Total Phosphorus [ ]  pH

[ ]  Quarterly sampling for the following metals parameters (Required if Baseline Monitoring in Item K exhibiting metals concentrations above the groundwater standards in [15A NCAC 02L](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20u/15a%20ncac%2002u%20.1101.pdf)):

[ ]  Arsenic [ ]  Lead

[ ]  Barium [ ]  Mercury

[ ]  Beryllium [ ]  Nickel

[ ]  Cadmium [ ]  Silver

[ ]  Chromium (total) [ ]  Zinc

[ ]  Copper [ ]  Iron

[ ]  Groundwater depth readings must be taken using transducers installed in monitoring wells throughout the wetland. Data should be recorded on 60 minute increments (minimum) throughout the year.

**Surface Water:**

[ ]  Monthly sampling for the following water chemistry parameters when surface water is present:

[ ]  Total Nitrogen [ ]  Conductivity

[ ]  Total Phosphorus [ ]  pH

[ ]  Surface water depth readings must be taken using transducers installed in monitoring wells throughout the wetland. Data should be recorded on 60 minute increments (minimum) throughout the year.

1. **Operation and Maintenance Plan** (All Application Packages):

[ ] [ ]  Per [15A NCAC 02U .0801](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20u/15a%20ncac%2002u%20.0403.pdf), submit an operation and maintenance (O&M) plan that includes, at a minimum, a description of:

[ ] [ ]  Operation of the reclaimed water utilization system in sufficient detail to show what operations are necessary for the system to function and by whom the functions are to be conducted.

[ ] [ ]  Anticipated maintenance of utilization system.

[ ] [ ]  Safety measures, including restriction of access to the site and equipment.

[ ] [ ]  Spill prevention provisions such as how to control, contain and remediate.

[ ] [ ]  Contact information for plant personnel, emergency responders and regulatory agencies.

[ ] [ ]  NOTE: A final O&M Plan shall be submitted with the partial and/or final Engineering Certification required under [15A NCAC 02T .0116](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20u/15a%20ncac%2002u%20.0403.pdf), however, a preliminary O&M Plan shall be submitted with each application package.

**ONE ORIGINAL AND TWO COPIES OF THE COMPLETED APPLICATION AND SUPPORTING DOCUMENTATION SHALL BE SUBMITTED TO:**

**NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY**

###### DIVISION OF WATER RESOURCES

**WATER QUALITY PERMITTING SECTION**

**NON-DISCHARGE PERMITTING UNIT**

|  |  |
| --- | --- |
| By U.S. Postal Service: | By Courier/Special Delivery: |
| 1617 Mail Service Center | 512 N. SALISBURY STREET |
| RALEIGH, NORTH CAROLINA 27699-1617 | RALEIGH, NORTH CAROLINA 27604 |
|  |  |
| TELEPHONE NUMBER: (919) 807-6464 | FAX NUMBER: (919) 807-6496 |

**State of North Carolina**

**Department of Environmental Quality**

**Division of Water Resources**

# 15A NCAC 02U – RECLAIMED WATER SYSTEMS – WETLAND AUGMENTATION

FORM: rWWA 06-16

1. **CONTACT INFORMATION**:
2. Applicant's name:

Mailing address:

City:       State:       Zip:      -

Telephone number: (   )    -     Email Address:

1. Signature authority’s name:       (per [15A NCAC 02T .0106](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20t/15a%20ncac%2002t%20.0106.pdf)) Title:
2. Consulting Engineer’s name:       License Number:       Firm:

 Mailing address:

City:       State:       Zip:      -

Telephone number: (   )    -     Email Address:

1. Consulting Soil Scientist’s name:       License Number:       Firm:

 Mailing address:

City:       State:       Zip:      -

Telephone number: (   )    -     Email Address:

1. Consulting Geologist’s name:       License Number:       Firm:

 Mailing address:

City:       State:       Zip:      -

Telephone number: (   )    -     Email Address:

1. Consulting Agronomist’s name:       Firm:

 Mailing address:

City:       State:       Zip:      -

Telephone number: (   )    -     Email Address:

1. **PROJECT INFORMATION**
2. Name of wetland augmentation project:
3. What is the beneficial purpose(s) of augmenting the wetland(s) with reclaimed water?
4. The proposed wetland augmentation activities will be:

[ ]  Non-conjunctive - the reclaimed water utilization activity is required to meet the wastewater disposal needs of the generating facility.

[ ]  Conjunctive - the proposed utilization option is not required to meet the wastewater disposal needs of the generating facility, and other permitted utilization/disposal alternatives are also available; or

1. Does the reclaimed water source facility already have a permit for generation of reclaimed water? [ ] [ ]  Yes or [ ] [ ]  No
* If Yes, list permit number:
* If No, then the Reclaimed Water Generation application (FORM: RWG) must also be included in this package.
1. **PROJECT INFORMATION (Continued)**
2. Based on evaluation of the proposed project by the Surface Water Protection Section - NPDES Unit, is a NPDES required for the subject project? [ ] [ ]  Yes or [ ] [ ]  No
* If Yes, provide either the corresponding NPDES Permit Number: NC      and date of issuance      ; or the date when NPDES permit application was submitted for review:
* If No, provide a written statement from the NPDES Unit stating that a NPDES permit is not required for the proposed project.

**Note:** All proposed wetland augmentation projects must be evaluated by the Surface Water Protection Section - NPDES Unit prior to issuance of a reclaimed water permit.

1. For existing reclaimed water generating facilities, which type of reclaimed water is produced in accordance with

([15A NCAC 2U .0301](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20u/15a%20ncac%2002u%20.0201.pdf))?

1. For existing reclaimed water generating facilities, has the monthly average Total Nitrogen concentration exceeded 4.0 mg/l during the previous twelve (12) months? [ ] [ ]  Yes or [ ] [ ]  No or [ ]  N/A (generating facility is proposed)

If Yes, then explain why the exceedance occurred and describe measures taken to ensure that exceedance will not occur in the future:

1. For existing reclaimed water generating facilities, has the monthly average Total Phosphorus concentration exceeded 1.0 mg/l during the previous twelve (12) months? [ ] [ ]  Yes or [ ] [ ]  No or [ ]  N/A (generating facility is proposed)

If Yes, then explain why the exceedance occurred and describe measures taken to ensure that exceedance will not occur in the future:

1. Does the Total Recoverable Metals Analysis provided (See Instruction C) show that metals concentrations in the reclaimed water exceed North Carolina surface water standards? [ ] [ ]  Yes or [ ] [ ]  No
* If Yes, then provide acute whole effluent toxicity test results to demonstrate the absence of toxicity.
1. In accordance with [15A NCAC 02U .1101(e)](https://www.membersbase.com/ncbels-vs/public/searchdb.asp), how will the public and/or employees be notified about the use of reclaimed water?
2. Specify the location within the application package where examples of notification materials can be found:
3. **UTILIZATION AREA SETBACKS (**[**15A NCAC 02U .0701**](https://www.membersbase.com/ncbels-vs/public/searchdb.asp)**)**
4. Provide the actual minimum distance in feet from utilization/augmentation areas to each item listed (distances greater than 500 feet may be marked N/A):

|  |  |  |
| --- | --- | --- |
| **Setback Parameter** | Utilization/Augmentation Areas | Final Effluent Storage Units |
|  | Required | Actual | Required | Actual |
| Any private or public water supply source |  |  | **100** |       |
| Any property line |  |  | **50** |       |
| Any well with exception of monitoring wells | **100** |       | **100** |       |
| Surface waters (streams – intermittent and perennial, and perennial waterbodies,) classified as SA | **100** |       | **50** |       |
| Surface waters (streams – intermittent and perennial, and perennial waterbodies) classified as SA | **25** |       | **50** |       |

1. **UTILIZATION AREA SETBACKS (Continued) -** [**15A NCAC 02U .0701**](http://www.ncnhp.org/)
2. Do the utilization/augmentation areas and storage units comply with all setbacks found in the river basin rules ([15A NCAC 2B .0200](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20b/subchapter%20b%20rules.pdf))?

[ ] [ ]  Yes or [ ] [ ]  No

* If no, list non-compliant setbacks:
1. Are any setback waivers required in order to comply with [15A NCAC 02U .0701](http://cvs.bio.unc.edu/)? [ ] [ ]  Yes or [ ] [ ]  No
* If yes, have these waivers been written, notarized signed by all parties involved and recorded with the County Register of Deeds? [ ] [ ]  Yes or [ ] [ ]  No
* If yes, has a Non-Discharge Wastewater System Waiver ([FORM: NDWSW](https://ncdenr.s3.amazonaws.com/s3fs-public/Water%20Quality/Aquifer%20Protection/LAU/Agreements/NDWSW%2011-13.pdf)) been included with this application package? [ ] [ ]  Yes or [ ] [ ]  No
1. RECLAIMED WATER CHARACTERISTICS
2. Complete the table below by providing a summary of effluent characteristics. For existing treatment facilities, effluent values should be based on the previous twelve months of effluent reporting.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Parameter | **Monthly Average** | **Geometric Mean** | **Daily Maximum** | **Groundwater Standard 1** |
|  | Actual | Required | Actual | Required | Actual | Required | ([15A NCAC 02L](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20l/subchapter%20l%20rules.pdf)) |
| BOD5 |       mg/l | 10 mg/l |  |  |       mg/l | 15 mg/l |  |
| TSS |       mg/l | 5 mg/l |  |  |       mg/l | 10 mg/l |  |
| Ammonia (NH3-N) |       mg/l | 4 mg/l |  |  |       mg/l | 6 mg/l |  |
| Nitrate (NO3-N) |       mg/l |  |  |  |  |  | 10 mg/l |
| Nitrite (NO2-N) |       mg/l |  |  |  |  |  | 1 mg/l |
| Total Nitrogen |       mg/l | 4 mg/l |  |  |  |  |  |
| Total Phosphorus |       mg/l | 1 mg/l |  |  |  |  |  |
| TKN |       mg/l |  |  |  |  |  |  |
| Turbidity |  |  |  |  |       NTU | 10 NTU |  |
| Fecal Coliforms [ ] **OR**E. Coli [ ] (choose one) |  |  |      /100 ml | 14/100 ml |      /100 ml | 25/100 ml |  |
| Chloride |       mg/l |  |  |  |  |  | 250 mg/l |
| TDS |       mg/l |  |  |  |  |  | 500 mg/l |
| pH (range min to max) |       s.u. |  |  |  |       s.u (min)      s.u. (max) |  | 6.5 – 8.5 s.u. |

1 If the reclaimed water exhibits parameter concentrations greater than 100 percent of the groundwater standards, the Permittee must submit a site-specific Hydrogeologic Model in accordance with [15A NCAC 02U .1101(b)(10)](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20u/15a%20ncac%2002u%20.0202.pdf). (See Instruction G)

1. RECLAIMED WATER CHARACTERISTICS (CONTINUED)

2. Complete the table below by providing metals analysis of the reclaimed water source to be used for wetland augmentation.

|  |  |  |  |
| --- | --- | --- | --- |
| **Parameter** | **Actual** | **Groundwater Standard 1** | **Surface Water Standard (Freshwater Aquatic Life) 2** |
| Arsenic |       µg/l | 50 µg/l | 50 µg/l |
| Barium |       mg/l | 2.0 mg/l |  |
| Beryllium |       µg/l |  | 6.5 µg/l |
| Cadmium |       µg/l | 1.75 µg/l | 2.0 µg/l |
| Chromium |       µg/l | 50 µg/l | 50 µg/l |
| Copper |       mg/l | 1.0 mg/l | 7 µg/l |
| Iron |       mg/l | 0.3 mg/l | 1 mg/l |
| Lead |       µg/l | 15 µg/l | 25 µg/l |
| Mercury |       µg/l | 1.05 µg/l | .012 µg/l |
| Nickel |       mg/l | 0.1 mg/l | 88 µg/l |
| Silver |       µg/l | 17.5 µg/l | 0.06 µg/l |
| Zinc |       mg/l | 1.05 mg/l | 50 µg/l |

1. If the reclaimed water exhibits parameter concentrations greater than 100 percent of the groundwater standards, the Permittee must submit a site-specific Hydrogeologic Model in accordance with [15A NCAC 02U .1101(b)(10)](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20l/subchapter%20l%20rules.pdf). (See Instruction G)
2. Metals concentrations in reclaimed water discharged to wetlands shall not exceed North Carolina surface water quality standards, unless acute whole effluent toxicity (WET) testing demonstrates absence of toxicity.
3. WETLAND INFORMATION
4. Complete the table below by providing the required details for each wetland augmentation area:

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Site ID | Latitude a | Longitude a | Wetland Type b | Wetland Classification c | Recommended Hydraulic Loading Rate(inches/year) | Minimum Area Required Based on Hydraulic Loading (acres) | Actual Area Available (acres) d | Area to Remain in Natural State (acres) e |
|       |   ○  ′  ″ | -  ○  ′  ″ |  |       |       |       |       |       |
|       |   ○  ′  ″ | -  ○  ′  ″ |  |       |       |       |       |       |
|       |   ○  ′  ″ | -  ○  ′  ″ |  |       |       |       |       |       |
|       |   ○  ′  ″ | -  ○  ′  ″ |  |       |       |       |       |       |
|       |   ○  ′  ″ | -  ○  ′  ″ |  |       |       |       |       |       |
| **Totals** |  |  |  |  |  |  |  |  |

a. Level of accuracy? Method of measurement?  Datum?

b. The wetland type for the proposed augmentation activities shall be determined according to the most current version of the [N.C. Wetlands Assessment Method (NC WAM) User Manual](https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-quality-program-development/ncwam-manual).

c. The wetland classification shall be determined in accordance with the surface water and wetlands standards in [15A NCAC 02B .0101](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20u/15a%20ncac%2002u%20.0701.pdf). Salt Water Wetlands (SWL) and Unique Wetlands (UWL) are prohibited from wetland augmentation use. A list of Unique Wetland sites can be found at the following link: [https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-quality-program-development/unique-wetlands](https://ncdenr.s3.amazonaws.com/s3fs-public/Water%20Quality/Aquifer%20Protection/APS%20Policies/GroundwaterModelingPolicy-20070531.pdf).

d. Non-conjunctive systems must provide at least 200 percent of the land requirements based on hydraulic loading rate recommendation pursuant to [15A NCAC 02U .1101(b)(8)](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20t/15a%20ncac%2002t%20.0116.pdf).

e. A minimum of ten percent of the land requirements shall remain in a natural state to be used as a basis of comparison pursuant to [15A NCAC 02U .1101(b)(9)](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20u/15a%20ncac%2002u%20.1101.pdf).

1. **DESIGN CRITERIA FOR UTILIZATION AND DISTRIBUTION SYSTEMS (**[**15A NCAC 02U .0402**](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20u/15a%20ncac%2002u%20.0301.pdf) **and** [**.0403**](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20u/15a%20ncac%2002u%20.0202.pdf)**)**
2. Fill in the table below to indicate the location in the plans and specifications where the following items can be located:

|  |  |  |
| --- | --- | --- |
| **Distribution System Design Element** | **Plan Sheet Number** | **Specification Page Number** |
| Labeling of valves, storage facilities, and outlets to warn the public or employees that reclaimed water is not intended for drinking in accordance with [15A NCAC 02U .0403(b)](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20u/15a%20ncac%2002u%20.0401.pdf) |       |       |
| Identification of piping, valves, and outlets as reclaimed water (i.e., color coding purple, labeling, taping, etc.) in accordance with 15A [NCAC 02U .0403(c)](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20l/subchapter%20l%20rules.pdf) a |       |       |
| Method of securing valves and outlets the permits operation by authorized personnel only in accordance with [15A NCAC 02U .0403(d)](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20u/15a%20ncac%2002u%20.0403.pdf) |       |       |
| Hose bibs locked for use by authorized personnel only in accordance with [15A NCAC 02U .0403(e)](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20u/15a%20ncac%2002u%20.0701.pdf) |       |       |

a. Identification of existing underground distributions systems shall be incorporated within 10 feet of crossing any water line or sanitary sewer line.

1. What is the method to provide system reliability in accordance with ([15A NCAC 02U .0402](http://www.lib.ncsu.edu/gis/counties.html))?
2. Will a certified operator of a grade equal or greater than the facility classification be on call 24 hrs/day in accordance with

([15A NCAC 02U .0402](https://www.membersbase.com/ncbels-vs/public/searchdb.asp))? [ ] [ ] [ ]  Yes or [ ] [ ]  No

1. Has each augmentation site been equipped with a flow meter to accurately determine the volume of reclaimed water utilized?

[ ] [ ]  Yes or [ ] [ ]  No

* If No, explain how flow will be measured:
1. **DESIGN INFORMATION FOR EARTHEN STORAGE IMPOUNDMENTS:** [**15A NCAC 02U .0401**](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20l/15a%20ncac%2002l%20.0107.pdf)

IF MORE THAN ONE IMPOUNDMENT, PROVIDE ADDITIONAL COPIES OF THIS PAGE AS NECESSARY.

1. Are there any earthen reclaimed water storage impoundments located at the wetland augmentation site(s)? [ ] [ ]  Yes or [ ] [ ]  No
* **If no, then skip the remaining items in Section V. and proceed to Section VI.**
1. What is the storage impoundment type?
* For required wet weather storage, does the amount of storage provided meet or exceed the amount of required storage calculated in the Water Balance (**Instruction F**)? [ ] [ ]  Yes or [ ] [ ]  No
1. Storage Impoundment Coordinates (Decimal Degrees): Latitude:   .     ○ Longitude: -  .     ○
2. Do any impoundments include a discharge point (pipe, spillway, etc)? [ ] [ ] [ ]  Yes or [ ] [ ]  No
* If Yes, has the required NPDES permit been obtained to authorize the discharge of reclaimed water? [ ] [ ]  Yes or [ ] [ ]  No
* Provide the NPDES permit number      ; or the date when NPDES application was submitted:
1. Is the impoundment designed to receive surface runoff? [ ] [ ] [ ]  Yes or [ ] [ ]  No

If yes, what is the drainage area?       ft2

1. Is a liner provided with a hydraulic conductivity no greater than 1 X 10 -6 cm/s? [ ] [ ]  Yes or [ ] [ ]  No

If No, has the Applicant provided predictive calculations or modeling demonstrating that such placement will not result in a contravention of GA groundwater standards? [ ] [ ]  Yes or [ ] [ ]  No

1. What is the depth to bedrock from the earthen impoundment bottom elevation?       ft
* If the depth to bedrock is less than four feet, has the Applicant provided a liner with a hydraulic conductivity no greater than 1 x 10-7 cm/s? [ ] [ ]  Yes, [ ] [ ]  No or [ ]  N/A
* If Yes, has the Applicant provided predictive calculations or modeling demonstrating that surface water or groundwater standards will not be contravened? [ ] [ ]  Yes or [ ] [ ]  No
* If the earthen impoundment is excavated into bedrock, has the Applicant provided predictive calculations or modeling demonstrating that surface water or groundwater standards will not be contravened? [ ] [ ]  Yes, [ ] [ ]  No or [ ] [ ]  N/A
1. If the earthen impoundment is lined and the mean seasonal high water table is higher than the impoundment bottom elevation, how will the liner be protected (e.g., bubbling, groundwater infiltration, etc.)?
2. If applicable, provide the specification page references for the liner installation and testing requirements:
3. If the earthen impoundment is located within the 100-year flood plain, has a minimum of two feet of protection (i.e., top of embankment elevation to 100-year flood plain elevation) been provided? [ ] [ ]  Yes or [ ] [ ]  No

|  |  |
| --- | --- |
| **Earthen Impoundment Design Elements** | **Earthen Impoundment Dimensions** |
| Liner type: | [ ]  Clay | [ ]  Synthetic | Top of embankment elevation: |       ft |
| [ ]  Other | [ ]  Unlined |
| Liner hydraulic conductivity: |       cm/s | Freeboard elevation: |       ft |
| Hazard class: |  | Toe of slope elevation:  |       ft |
| Designed freeboard: |       ft | Impoundment bottom elevation:  |       ft |
| Total volume: |       ft3 |       gallons | Mean seasonal high water table depth:  |       ft |
| Effective volume: |       ft3 |       gallons | Embankment slope: |       :       |
| Effective storage time: |       days | Top of dam water surface area: |       ft2 |
| Plan Sheet Reference: |       | Freeboard elevation water surface area: |       ft2 |
| Specification Section: |       | Bottom of impoundment surface area: |       ft2 |

1. Provide the requested earthen impoundment design elements and dimensions:

**Professional Engineer's Certification:**

I,       , attest that this application for

 has been reviewed by me and is accurate, complete and consistent with the information supplied in the engineering plans, calculations, and all other supporting documentation to the best of my knowledge. I further attest that to the best of my knowledge the proposed design has been prepared in accordance with this application package and its instructions as well as all applicable regulations and statutes. Although other professionals may have developed certain portions of this submittal package, inclusion of these materials under my signature and seal signifies that I have reviewed this material and have judged it to be consistent with the proposed design. **Note**: In accordance with NC General Statutes 143-215.6A and 143-215.6B, any person who knowingly makes any false statement, representation, or certification in any application package shall be guilty of a Class 2 misdemeanor, which may include a fine not to exceed $10,000 as well as civil penalties up to $25,000 per violation.

North Carolina Professional Engineer's seal, signature, and date:

**Applicant's Certification (signing authority must be in compliance with** [**15A NCAC 02T .0106**](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20t/15a%20ncac%2002t%20.0106.pdf)**):**

I,

(signing authority name – PLEASE PRINT) (title)

attest that this application for

(facility name)

has been reviewed by me and is accurate and complete to the best of my knowledge. I understand that any discharge of wastewater from this non-discharge system to surface waters or the land will result in an immediate enforcement action that may include civil penalties, injunctive relief, and/or criminal prosecution. I will make no claim against the Division of Water Resources should a condition of this permit be violated. I also understand that if all required parts of this application package are not completed and that if all required supporting information and attachments are not included, this application package will be returned to me as incomplete. I further certify that the applicant or any affiliate has not been convicted of an environmental crime, has not abandoned a wastewater facility without proper closure, does not have an outstanding civil penalty where all appeals have been exhausted or abandoned, are compliant with any active compliance schedule, and do not have any overdue annual fees under Rule [15A NCAC 02T .0105](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20t/15a%20ncac%2002t%20.0105.pdf). **Note**: In accordance with NC General Statutes 143-215.6A and 143-215.6B, any person who knowingly makes any false statement, representation, or certification in any application package shall be guilty of a Class 2 misdemeanor, which may include a fine not to exceed $10,000 as well as civil penalties up to $25,000 per violation.

Signature: Date: