**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. 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://deq.nc.gov/about/divisions/water-resources/water-resources-permits/wastewater-branch/non-discharge-permitting)*.*

**General** – This application is for projects involving the non-conjunctive use of reclaimed water. Non-conjunctive use means that reclaimed water utilization is required to meet the wastewater disposal needs of the facility (the reclaimed water utilization is not optional). **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.

Note that use of reclaimed water for the purpose of wetland augmentation requires submittal of FORM: RWWA.

1. **Non-Conjunctive Use of Reclaimed Water (FORM: RWNC 06-16) Application** (All application packages):

Submit the completed and appropriately executed Non-Conjunctive Use of Reclaimed Water (FORM: RWNC 06-16) form. 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 made, as long as the attachments are numbered to correspond to the section and item to which they refer.

The user name in Item II.1. shall be consistent with the user 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://www.membersbase.com/ncbels-vs/public/searchdb.asp).

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%20t/15a%20ncac%2002t%20.0106.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)](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).

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** (All Application Packages involving new or expanding uses of reclaimed water):

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 reclaimed water utilization sites. Property ownership documentation shall consist of one (or more) of the following:

Legal documentation of ownership (i.e., [GIS](http://www.lib.ncsu.edu/gis/counties.html), 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%20l/15a%20ncac%2002l%20.0107.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. **Soil Evaluation for Non-Conjunctive Irrigation Systems** (For application packages including new irrigation areas not previously approved)

Per [15A NCAC 02U .0202(b)](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 soil evaluation of the irrigation site(s) that has been signed, sealed and dated by a [North Carolina Licensed Soil Scientist](http://ncblss.org/lss-directory.pdf) and includes at a minimum:

The report shall identify all the proposed irrigation sites with project name, location, and include a statement that the areas were recommended for the proposed reclaimed water utilization 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 for each irrigation area.

A representative soils analysis (Standard Soil Fertility Analysis) conducted on each irrigation 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 utilization site and showing all physical features, location of pits and auger borings, legends, scale, and north arrow.

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. **Agronomist Evaluation** (For application packages that include new irrigation areas not previously approved):

Per [15A NCAC 02U .0201(h)](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(i)](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 an agronomist evaluation that has been signed, sealed and dated by a qualified professional and includes at a minimum:

Proposed nutrient uptake values for each cover crop based upon each field’s dominant soil series and percent slope.

Plant available nitrogen calculations for each cover crop using the expected effluent concentrations and appropriate mineralization and volatilization rates.

Historical site consideration, soil binding and plant uptake of phosphorus.

Seasonal irrigation restrictions, if appropriate.

Management plan for all specified crops.

1. **Hydrogeologic Report** (For systems treating industrial waste or having a design flow over 25,000 GPD):

Per [15A NCAC 02U .0202(e)](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 detailed hydrogeologic investigation that has been signed, sealed and dated by a [North Carolina Licensed Geologist](http://www.ncblg.org/), 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;

They 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.

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](https://ncdenr.s3.amazonaws.com/s3fs-public/Water%20Quality/Aquifer%20Protection/APS%20Policies/HydrogeologicInvestigationsPolicy-20070531.pdf), the [Groundwater Modeling Policy](https://ncdenr.s3.amazonaws.com/s3fs-public/Water%20Quality/Aquifer%20Protection/APS%20Policies/GroundwaterModelingPolicy-20070531.pdf), and the [Performance and Analysis of Aquifer Slug Tests and Pumping Tests Policy](https://ncdenr.s3.amazonaws.com/s3fs-public/Water%20Quality/Aquifer%20Protection/APS%20Policies/AquiferTestingPolicy-20070531.pdf).

1. **Water Balance** (For all application packages that include wet-weather storage located at the non-conjunctive user site, changes in flow, or changes in 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).

Other factors that may restrict the hydraulic loading rate when determining a water balance include:

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](https://ncdenr.s3.amazonaws.com/s3fs-public/Water%20Quality/Aquifer%20Protection/APS%20Policies/WaterBalanceCalculationPolicy-20080912.pdf).

1. **Engineering** **Plans** (All Application Packages):

Per [15A NCAC 02U .0202(c)(1)](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 plan sets that have been signed, sealed and dated by a [North Carolina licensed Professional Engineer](https://www.membersbase.com/ncbels-vs/public/searchdb.asp).

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, valves, flow meters, etc.

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

The irrigation area with an overlay of the suitable irrigation areas depicted in the Soil Evaluation.

Each nozzle/emitter and their wetted area influence, and each irrigation zone labeled as it will be operated.

Locations within the irrigation system of air releases, drains, control valves, highest irrigation nozzle/emitter, etc.

For irrigation of food chain crops, plans shall clearly show the method of irrigation (i.e. direct or indirect).

For automated irrigation systems, provide the location and details of the precipitation/soil moisture sensor.

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** (All Application Packages):

Per [15A NCAC 02U .0202(c)](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 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 utilization system, including all piping, valves, pumps, flow meters, high water alarms, cross connection controls, etc. For irrigation systems, include details for spray heads and/or drip emitters.

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

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.)

Means for ensuring quality and integrity of the finished product, including leakage, pressure and liner testing.

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** (All Application Packages):

Per [15A NCAC 02U .0202(c)](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 engineering calculations 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 engineering calculations shall include the following items:

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, spray heads/emitters, etc;

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

For irrigation systems, demonstrate the designed maximum precipitation and annual loading rates do not exceed the recommended rates;

For non-irrigation uses, demonstrate how reclaimed water usage was determined.

1. **Site Map** (All Application Packages):

Per [15A NCAC 02U .0202(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 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 facility with cut sheet annotations may be submitted.

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

A scaled map of the utilization 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 the reclaimed water storage and utilization areas.

Soil mapping units shown on all irrigation 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 utilization 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%20u/15a%20ncac%2002u%20.0701.pdf).

Site property boundaries within 500 feet of all reclaimed water storage and utilization sites.

**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](http://maps.google.com/maps?q=512+N.+Salisbury+Street,+Raleigh,+North+Carolina+27604&hl=en&ll=35.787584,-78.638785&spn=0.008146,0.013711&sll=37.0625,-95.677068&sspn=32.610437,56.162109&vpsrc=6&hnear=512+N+Salisbury+St,+Raleigh,+North+Carolina+27603&t=m&z=1) |
| 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 – NON-CONJUNCTIVE UTILIZATION

FORM: rWNC 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. **USER INFORMATION**
2. Reclaimed water user name(s):       User facility physical address:

City:       State:       Zip:      -     County:

1. Facility status:
2. What is the proposed beneficial use(s) of the reclaimed water in accordance with [15A NCAC 02U .0101(a)](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20u/15a%20ncac%2002u%20.0101.pdf) ?

(Check all that apply)

Irrigation (non food crop)  Irrigation (food chain crops)  Industrial process water make up

Cooling towers  Chiller/Boiler makeup  Urinal/Toilet flushing (non-residential)

Fire protection (non-residential)  Other (specify):

1. Amount of reclaimed water to be used:       gallons per day
2. 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. **USER INFORMATION (Continued)**
2. Explanation of how usage volume was calculated:
3. In accordance with [15A NCAC 02U .0501(a)(2) and (b)(2)](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20u/15a%20ncac%2002u%20.0501.pdf), how will the public and/or employees be notified about the use of reclaimed water?
4. Specify the location within the application package where examples of notification materials can be found:
5. **UTILIZATION AREA SETBACKS (**[**15A NCAC 02U .0701**](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)**)**
6. Provide the actual minimum distance in feet from the storage units and utilization areas to each item listed (distances greater than 500 feet may be marked N/A):

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Setback Parameter** | Utilization 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, perennial waterbodies, and wetlands) classified as SA | **100** |  | **50** |  |
| Surface waters (streams – intermittent and perennial, perennial waterbodies, and wetlands) **not** classified as SA | **25** |  | **50** |  |

1. Do the utilization 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://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20u/15a%20ncac%2002u%20.0701.pdf)?  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. **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%20.0402.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%20.0403.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 inform 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%20.0403.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%20u/15a%20ncac%2002u%20.0403.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 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%20.0403.pdf) |  |  |

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

1. Will potable water be used to supplement the reclaimed water system?  Yes or  No

* If yes, what cross connection control measures will be taken in accordance with [15A NCAC 02U .0403(f)](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)?

Plan Sheet Number       Specification Page Number

* If yes, is documentation that the proposed cross-connection control measures have been approved by the Division of Environmental Health’s Public Water Supply Section included in this application package?  Yes or  No

1. What is the method to provide power reliability?
2. Will a certified operator of a grade equal or greater than the facility classification be on call 24 hrs/day?  Yes or  No
3. Will each utilization area be equipped with a flow meter to measure the volume of reclaimed water used?  Yes or  No

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%20u/15a%20ncac%2002u%20.0401.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 utilization 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:
2. **DESIGN INFORMATION FOR NON-CONJUNCTIVE IRRIGATION SYSTEMS**
3. Will reclaimed water be used for irrigation?  Yes or  No

* **If no, then skip the remaining items in Section VI., and proceed to Section VII.**

1. The irrigation system is:  existing  proposed
2. The irrigation system is:
3. Does the irrigation area contain any subsurface drainage structures?  Yes or  No

* If yes, where does the drainage system discharge?

1. Provide the minimum depth to the seasonal high water table within the irrigation area:

NOTE: The vertical separation between the seasonal high water table and the ground surface shall be at least one foot.

1. Provide the equipment information below for spray and/or drip systems:

|  |  |  |  |
| --- | --- | --- | --- |
| **Spray Utilization Design Element** |  | **Plan Sheet Number** | **Specification Page Number** |
| Wetted diameter of nozzles | ft |  |  |
| Wetted area of nozzles | ft2 |  |  |
| Nozzle capacity | gpm |  |  |
| Nozzle manufacturer / model | / |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| **Drip Utilization Design Element** |  | **Plan Sheet Number** | **Specification Page Number** |
| Wetted area of emitters | ft2 |  |  |
| Distance between laterals | ft |  |  |
| Distance between emitters | ft |  |  |
| Emitter capacity | gpm |  |  |
| Emitter manufacturer / model | / |  |  |

1. If applicable, provide the location of each design element in the specifications and engineering plans for irrigation dosing systems:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Utilization Pump Tank** |  | | | | **Plan Sheet Number** | **Specification Page Number** |
| Internal dimensions (L x W x H or φ x H) | ft | ft | | ft |  |  |
| Total volume | ft3 | | gallons | |  |  |
| Dosing volume | ft3 | | gallons | |  |  |
| Audible & visual alarms |  | | | |  |  |
| Equipment to prevent utilization during rain events |  | | | |  |  |

1. **DESIGN INFORMATION FOR NON-CONJUNCTIVE IRRIGATION SYSTEMS (Continued)**
2. Provide the following information for each irrigation zone within the system:

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Zone | Latitude a | Longitude a | Area (ft2) | **Recommended Loading Rate b**  **(in/hr)** | **Recommended Loading Rate b**  **(in/yr)** | **Design Precipitation Rate b(in/hr)** | **Design Annual Loading Rate b (in/yr)** | **Soil Series** | **Crop Type** | Waterbody **Stream Index No. c** | Classification c |
|  | ○  ′  ″ | -  ○  ′  ″ |  |  |  |  |  |  |  |  |  |
|  | ○  ′  ″ | -  ○  ′  ″ |  |  |  |  |  |  |  |  |  |
|  | ○  ′  ″ | -  ○  ′  ″ |  |  |  |  |  |  |  |  |  |
|  | ○  ′  ″ | -  ○  ′  ″ |  |  |  |  |  |  |  |  |  |
|  | ○  ′  ″ | -  ○  ′  ″ |  |  |  |  |  |  |  |  |  |
|  | ○  ′  ″ | -  ○  ′  ″ |  |  |  |  |  |  |  |  |  |
|  | ○  ′  ″ | -  ○  ′  ″ |  |  |  |  |  |  |  |  |  |
|  | ○  ′  ″ | -  ○  ′  ″ |  |  |  |  |  |  |  |  |  |
|  | ○  ′  ″ | -  ○  ′  ″ |  |  |  |  |  |  |  |  |  |
|  | ○  ′  ″ | -  ○  ′  ″ |  |  |  |  |  |  |  |  |  |
|  | ○  ′  ″ | -  ○  ′  ″ |  |  |  |  |  |  |  |  |  |
|  | ○  ′  ″ | -  ○  ′  ″ |  |  |  |  |  |  |  |  |  |
|  | ○  ′  ″ | -  ○  ′  ″ |  |  |  |  |  |  |  |  |  |
|  | ○  ′  ″ | -  ○  ′  ″ |  |  |  |  |  |  |  |  |  |
|  | ○  ′  ″ | -  ○  ′  ″ |  |  |  |  |  |  |  |  |  |
|  | ○  ′  ″ | -  ○  ′  ″ |  |  |  |  |  |  |  |  |  |
|  | ○  ′  ″ | -  ○  ′  ″ |  |  |  |  |  |  |  |  |  |

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

b. For seasonal loading rates, list appropriate months.

c. Instructions for determining the waterbody stream index number and its associated classification can be found here:

[https://ncdenr.s3.amazonaws.com/s3fs-public/Water%20Quality/Aquifer%20Protection/LAU/Agreements/WSCA%2008-13.pdf](https://ncdenr.s3.amazonaws.com/s3fs-public/Water%20Quality/Aquifer%20Protection/LAU/Agreements/WSCA%2008-13.pdf%0c)

1. **DESIGN INFORMATION FOR NON-CONJUNCTIVE IRRIGATION SYSTEMS (Continued)**
2. Provide the following cover crop information to demonstrate the reclaimed water will be applied at or below agronomic rates:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Cover Crop | Soil Series | % Slope | Nitrogen Uptake Rate (lbs/ac∙yr) | Phosphorus Uptake Rate (lbs/ac∙yr) |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

1. Specify where the nitrogen and phosphorus uptake rates for each cover crop were obtained:
2. Proposed nitrogen mineralization rate:
3. Proposed nitrogen volatilization rate:
4. Minimum irrigation area from the Agronomist Evaluation’s nitrogen balance:       ft2
5. Minimum irrigation area from the Agronomist Evaluation’s phosphorus balance:       ft2
6. Minimum irrigation area from the water balance:       ft2
7. LOCATION INFORMATION FOR NON-CONJUNCTIVE UTILIZATION AREAS (other than irrigation)
8. Will reclaimed water be utilized for purposes other than irrigation?  Yes or  No If No, skip this Section.
9. Provide the following information for all other reclaimed water utilization sites (non-irrigation):

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Site ID | Latitude a | Longitude a | Allowable Use | Waterbody **Stream Index No. b** | Classification b |
|  | ○  ′  ″ | -  ○  ′  ″ |  |  |  |
|  | ○  ′  ″ | -  ○  ′  ″ |  |  |  |
|  | ○  ′  ″ | -  ○  ′  ″ |  |  |  |
|  | ○  ′  ″ | -  ○  ′  ″ |  |  |  |
|  | ○  ′  ″ | -  ○  ′  ″ |  |  |  |
|  | ○  ′  ″ | -  ○  ′  ″ |  |  |  |
|  | ○  ′  ″ | -  ○  ′  ″ |  |  |  |
|  | ○  ′  ″ | -  ○  ′  ″ |  |  |  |
|  | ○  ′  ″ | -  ○  ′  ″ |  |  |  |
|  | ○  ′  ″ | -  ○  ′  ″ |  |  |  |
|  | ○  ′  ″ | -  ○  ′  ″ |  |  |  |
|  | ○  ′  ″ | -  ○  ′  ″ |  |  |  |

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

b. Instructions for determining the waterbody stream index number and its associated classification:

[https://ncdenr.s3.amazonaws.com/s3fs-public/Water%20Quality/Aquifer%20Protection/LAU/Agreements/WSCA%2008-13.pdf](https:/ncdenr.s3.amazonaws.com/s3fs-public/Water%20Quality/Aquifer%20Protection/LAU/Agreements/WSCA%2008-13.pdf)

**VIII. IRRIGATION OF FOOD CHAIN CROPS**

1. Will the system be used to irrigate food chain crops?  Yes or  No
2. If **Yes**, please complete the flowchart below by checking the appropriate yes/no responses. **If No, skip this Section.**

Will the portion of the crop intended for human consumption be peeled, skinned, cooked, or thermally processed prior to human consumption?

Yes  No

Will the irrigation activity result in the direct contact of reclaimed water on the portion of the crop intended for human consumption (direct contact irrigation)?

Type 1 reclaimed water allowed pursuant to [(15A NCAC 02U .0301(b))](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), for direct or indirect contact irrigation.

Yes  No

This activity is not allowed without further study pursuant to [15A NCAC 02U .1401(a)(5)](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20u/15a%20ncac%2002u%20.1401.pdf).

Type 2 reclaimed water allowed pursuant to

[15A NCAC 02U .0301(a)](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), for indirect contact irrigation.

1. What type of notification will be provided at the irrigation site(s) to inform the public about the use of reclaimed water in accordance with [15A NCAC 02U .1401](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20u/15a%20ncac%2002u%20.1401.pdf)?

**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: