**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 shall be used for projects involving the generation of reclaimed water that is to be utilized in either a conjunctive or non-conjunctive manner. Non-conjunctive use means that the reclaimed water utilization activity is required to meet the wastewater disposal needs of the generating facility. Conjunctive use means that the proposed 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. **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 (FORM: RWPI).

1. **Reclaimed Water Generation Application (FORM: RWG 06-16)** (All application packages):

Submit the completed and appropriately executed Reclaimed Water Generation (FORM: RWG 06-16) application. 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 facility name in Item II.1. shall be consistent with the facility name on the plans, specifications, agreements, etc.

The Professional Engineer’s Certification on Page 9 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 9 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 generation systems):

Per [15A NCAC 02U .0201(e)](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 [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 written documentation of ownership for all property containing the reclaimed water generation equipment, reclaimed water storage units, and 5-day upset units. 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. **Wastewater Chemical Analysis** (For new or expanding generation systems treating Industrial Waste):

Per [15A NCAC 02U .0201(g)](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(h),](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) provide a complete Division certified laboratory chemical analysis of the effluent to be irrigated for the following parameters (For new facilities, an analysis from a similar facility’s effluent is acceptable):

|  |  |  |
| --- | --- | --- |
| * Ammonia Nitrogen (NH3-N) | * 5-day BOD (BOD5) | * Total Dissolved Solids |
| * Calcium | * Magnesium | * Total Kjeldahl Nitrogen (TKN) |
| * Chemical Oxygen Demand (COD) | * Nitrate Nitrogen (NO3-N) | * Total Organic Carbon |
| * Chloride | * pH | * Total Phosphorus |
| * Coliphage (Type 2 reclaimed water only) | * Phenol | * Total Trihalomethanes |
| * Clostridium perfringens (Type 2 reclaimed water) | * Sodium | * Total Volatile Organic Compounds |
| * Fecal Coliform or E. coli | * Sodium Adsorption Ratio (SAR) | * Toxicity Test Parameters |

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

Per [15A NCAC 02U .0201(c)](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(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 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).

The engineering plans shall include the following items:

Table of contents with each sheet numbered.

A general location map with at least two geographic references, a vicinity map, fencing around treatment and storage facilities.

A process flow diagram showing all flow, recycle/return, aeration, chemical, and wasting paths. (For conjunctive facilities, include only those treatment units, in addition to existing units, that are needed to produce reclaimed water.)

Plan and profile views of all treatment and storage units, including their piping, valves, and equipment (i.e., pumps, blowers, mixers, diffusers, flow meters, etc.), as well as their dimensions and elevations. (For conjunctive facilities, include only those treatment units, in addition to existing units, that are needed to produce reclaimed water.

Auxiliary power supply. (Non-conjunctive systems only.)

A hydraulic profile from the treatment plant headworks to the point where reclaimed water is released to the distribution system. (Non-conjunctive systems only.)

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 .0201(c)](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(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 each treatment and storage unit, as well as all piping, valves, equipment (i.e., pumps, blowers, mixers, diffusers, flow meters, etc.), audible/visual high water alarms, liner material, etc. (For conjunctive facilities, include only those treatment units, in addition to existing units, that are needed in order to produce reclaimed water.)

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 .0201(c)](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(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:

Hydraulic and pollutant loading calculations for each treatment unit demonstrating how the designed effluent concentrations in Application Item V.1. were determined (NOTE: “black box” calculations are unacceptable). (For conjunctive facilities, include only those treatment units, in addition to existing units, that are needed to produce reclaimed water.)

Sizing criteria for each treatment unit and associated equipment (i.e., blowers, mixers, flow meters, pumps, etc.). (For conjunctive facilities, include only those treatment units, in addition to existing units, that are needed in order to produce reclaimed water.)

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 treatment units, pumps, blowers, mixers, diffusers, flow meters, etc.

Flotation calculations for all treatment and storage units constructed partially or entirely below grade.

1. **Water Balance** (For Non-Conjunctive application packages that include new or modified reclaimed water storage units to be located on the property of the reclaimed water generator):

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. **Residuals Management Plan** (All Application Packages with new, expanding or replacement wastewater treatment systems):

Per [15A NCAC 02U .0802](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20u/15a%20ncac%2002u%20.0802.pdf), submit a Residuals Management Plan that shall include, at a minimum:

A detailed explanation of how generated residuals (including trash, sediment and grit) will be collected, handled, processed, stored, and disposed.

An evaluation of the treatment facility’s residuals storage requirements based upon the maximum anticipated residuals production rate and ability to remove residuals. NOTE: Per [15A NCAC 02U .0402(n)](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), a minimum of 30 days of residual storage shall be provided for non-conjunctive reclaimed water systems.

A permit for residuals utilization or a written commitment to the Applicant from a Permittee of a Department approved residuals disposal/utilization program that has adequate permitted capacity to accept the residuals or has submitted a residuals/utilization program application. NOTE: Per [15A NCAC 02U .0202(j)](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), a written commitment is not required at the time of this application; however, it shall be provided prior to operation of any permitted facilities herein.

If oil/grease removal and collection are a designed unit process, submit an oil/grease disposal plan detailing how the oil/grease will be collected, handled, processed, stored and disposed. NOTE: If an on-site restaurant or other business with food preparation is contributing wastewater to this system, an oil/grease disposal plan shall be submitted.

1. **Distribution System Monitoring Plan (All application packages):**

Include a distribution system monitoring plan for verifying that reclaimed water standards ([15A NCAC 02U .0301](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)) will be met at the utilization site(s). At a minimum, the following items shall be included:

Specify the sampling locations within the distribution system that will provide data representative of the reclaimed water delivered to users.

The number of sampling locations should be equivalent to approximately 25 percent of the service connections to the reclaimed water distribution system; or 5 locations, whichever is fewer. In no case shall fewer than two locations be sampled.

Monitoring shall include samples of: fecal coliform, pH, and total residual chlorine.

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

**Non-Conjunctive Systems**

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 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 wastewater treatment and storage areas.

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 treatment and storage sites.

Setbacks as required by [15A NCAC 02U .0701(a) and (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).

Site property boundaries within 500 feet of all treatment and storage units.

All habitable residences or places of public assembly within 500 feet of all treatment and storage units.

**Conjunctive Systems**

Per [15A NCAC 02U .0201(d)](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 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 site showing all facility-related structures and fences within the wastewater treatment and storage areas.

Location of features in [15A NCAC 02U .0701(a) and (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), to the extent needed to determine compliance with setbacks.

1. **Education Program** (All New Generators)

Per [15A NCAC 02U .0501](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), provide documentation of a program of education and approval for all reclaimed water users. At a minimum this material shall include:

Definition of reclaimed water.

Information on the proper use of reclaimed water.

Examples of improper uses of reclaimed water.

Clarification that reclaimed water is not for drinking.

Clarification that reclaimed water cannot be discharged to surface waters and should not be allowed to runoff from the utilization areas.

Address any other environmental and/or public health protection measures.

Methods to be used to provide employees educational material in a language they can understand.

**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 – GENERATION

FORM: rwg 06-16

1. **CONTACT INFORMATION**:
2. Applicant's name:
3. 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:
4. Applicant’s mailing address:

City:       State:       Zip:      -

Telephone number: (   )    -     Email Address:

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

Mailing address:

City:       State:       Zip:      -

Telephone number: (   )    -     Email Address:

1. **FACILITY INFORMATION**
2. Reclaimed water generating facility name:

Facility’s physical address:

City:       State:       Zip:      -     County:

1. Facility Coordinates: Latitude:   ○   ′   ″ Longitude: -  ○   ′   ″

Datum: Level of Accuracy Method of Measurement

1. USGS Map Name:
2. Information for nearest waterbody a:

Stream Index No.:       Stream Classification:

a To determine the waterbody stream index number and its associated classification, download the current classifications list at the following web address: <https://ncdenr.s3.amazonaws.com/s3fs-public/Water%20Quality/Aquifer%20Protection/LAU/Agreements/WSCA%2008-13.pdf>.

1. Facility status:
2. Reclaimed water utilization will be:

Non-Conjunctive –reclaimed water utilization is required to meet the wastewater disposal needs of the facility.

Conjunctive – reclaimed water option is not necessary to meet the wastewater disposal needs of the facility and other wastewater utilization or disposal methods are available at all times ([15A NCAC 02U .0103(3)](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20u/15a%20ncac%2002u%20.0103.pdf)).

For Conjunctive, what is the alternate wastewater disposal method?

NPDES Permit No.

Other (specify):

1. **INFORMATION ON RECLAIMED WATER GENERATION:**
2. What is the origin of the influent (i.e., school, residential, hospital, municipality, industry, etc.)?
3. Reclaimed water generating capacity for this project:       gallons per day (GPD)
4. What is the wastewater type?  Domestic or  Industrial (See [15A NCAC 02T .0103(20)](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20t/15a%20ncac%2002t%20.0103.pdf))

Is there a Pretreatment Program in effect?  Yes or  No

Has a wastewater chemical analysis been submitted in accordance with Instruction C?  Yes or  No

1. How was the influent flow rate determined?  [15A NCAC 02T .0114](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20t/15a%20ncac%2002t%20.0114.pdf) or  Representative Data
2. Has a flow reduction been approved under [15A NCAC 02T .0114(f)](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20t/15a%20ncac%2002t%20.0114.pdf)?  Yes or  No
3. Provide the required information in the table below to document design flow pursuant to [15A NCAC 02T .0114](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20t/15a%20ncac%2002t%20.0114.pdf):

|  |  |  |  |
| --- | --- | --- | --- |
| **Establishment Type** | **Daily Design Flow a** | **No. of Units** | Flow |
|  | gal/ |  | GPD |
|  | gal/ |  | GPD |
|  | gal/ |  | GPD |
|  | gal/ |  | GPD |
|  | gal/ |  | GPD |
|  | gal/ |  | GPD |
| Total | GPD |

1. **TREATMENT AND STORAGE UNIT 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)**)**
2. Provide the actual minimum distance in feet from the treatment units, storage units, and utilization areas to each item listed (distances greater than 500 feet may be marked N/A):

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Setback Parameter** | Treatment Units/5-day Upset Storage | | Final Effluent Storage Units | |
|  | Required | Actual | Required | Actual |
| Any habitable residence or place of assembly under separate ownership or not to be maintained as part of the project site | **100** |  |  |  |
| Any private or public water supply source | **100** |  | **100** |  |
| Surface waters (streams – intermittent and perennial, perennial waterbodies, and wetlands) | **50** |  | **50** |  |
| Any well with exception of monitoring wells | **100** |  | **100** |  |
| Any property line | **50** |  | **50** |  |

1. Do the treatment 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 the required 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 filling in the estimated influent concentrations and design effluent characteristics ([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%20.0301.pdf)):

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Parameter | **Estimated Influent**  **Concentration** | **Design Effluent**  **Monthly Average** | | **Design Effluent**  **Geometric Mean** | | **Design Effluent**  **Daily Maximum** | |
| Actual | Required | Actual | Required | Actual | Required |
| BOD5 | mg/l | mg/l | 10 mg/l (Type 1)  5 mg/l (Type 2) |  |  | mg/l | 15 mg/l (Type 1)  10 mg/l (Type 2) |
| TSS | mg/l | mg/l | 5 mg/l (Type 1)  5 mg/l (Type 2) |  |  | mg/l | 10 mg/l (Type 1)  10 mg/l (Type 2) |
| NH3-N | mg/l | mg/l | 4 mg/l (Type 1)  1 mg/l (Type 2) |  |  | mg/l | 6 mg/l (Type 1)  2 mg/l (Type 2) |
| NO3-N | mg/l | mg/l |  |  |  |  |  |
| NO2-N | mg/l | mg/l |  |  |  |  |  |
| Total Nitrogen | mg/l | mg/l | 4 mg/l (wetland augmentation only) |  |  |  |  |
| Total Phosphorus | mg/l | mg/l | 1 mg/l (wetland augmentation only) |  |  |  |  |
| TKN |  | mg/l |  |  |  |  |  |
| Turbidity |  |  |  |  |  | NTU | 10 NTU (Type 1)  5 NTU (Type 2) |
| Fecal Coliforms  **OR**  E. Coli  (choose one) | /100 ml |  |  | /100 ml | 14/100 ml (Type 1)  3/100 ml (Type 2) | /100 ml | 25/100 ml (Type 1)  25/100 ml (Type 2) |
| Coliphage - (Type 2 only) | /100 ml |  |  | /100 ml | 5/100 ml (Type 2) | /100 ml | 25/100 ml (Type 2) |
| Clostridium perfingen - (Type 2 only) | /100 ml |  |  | /100 ml | 5/100 ml (Type 2) | /100 ml | 25/100 ml (Type 2) |

1. Have calculations or historical data been provided to justify the design effluent values shown in Item V.1. above? (See Application Instruction F)?  Yes  No

* If No, please explain:

1. **RECLAIMED WATER SYSTEM DESIGN CRITERIA (**[**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) **or** [**.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)**)**
2. Plan sheet number where instrumentation for continuous monitoring/recording for turbidity/particle count is shown:
3. Plan sheet number where instrumentation for continuous flow recording is shown:
4. What is the method of preventing public access to the treatment facility and five day upset basin?

* Plan sheet number where restricted access method is shown:

1. Is there an automatically activated standby power supply onsite?  Yes  No

* If Yes, plan sheet number where standby power supply is shown:
* If No, what other means will be used to prevent improperly treated wastewater from entering the storage, distribution, or utilization system?

1. Will a certified operator of a grade equal or greater than the facility classification be on call 24 hrs/day?  Yes or  No
2. What classification of reclaimed water does the generator intend to provide per ([15A NCAC 02U .0301](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))?

Type 1 – [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); or

Type 2 - [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) - (Note: Type 2 required for indirect contact irrigation of food chain crops where the food product will not be peeled, skinned, cooked or thermally processed prior to human consumption.)

Are the following design criteria met for Type 2?

* Dual disinfection systems containing both UV disinfection and chlorination (or equivalent dual disinfection processes) provided pursuant to [15A NCAC 02U .0401(h)](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) or [.0402(q)?](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)   Yes  No
* Has documentation been provided to show that the combined treatment and disinfection processes are capable of the following pathogen reductions pursuant to [15A NCAC 02U .0401(i)](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) or [.0402(r)](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)?
* log 6 or greater reduction of E. coli  Yes  No
* log 5 or greater reduction of Coliphage  Yes  No
* log 4 or greater reduction of Clostridium perfringens  Yes  No

Other – [15A NCAC 02U .0301(c)](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) – reclaimed water will be produced by an industrial facility, will be used at the facility in the industry’s process, use area has no public access, and the use will not result in employee exposure.

**Items VI.7.–VI.15. are for NON CONJUNCTIVE SYSTEMS – If you checked “Conjunctive” in Item II.6., skip to Section VII:**

1. Is aerated flow equalization provided with a capacity of at least 25% of daily system design flow?  Yes or  No

* If no, how does the Applicant intend on complying with [15A NCAC 02U .0402(b)](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)?

1. Are dual facilities provided for all essential treatment units?  Yes or  No

Note: This refers to any unit process whose loss would likely render the facility incapable of meeting require performance criteria including aeration, clarification, filtration, disinfection, pumps, blowers, etc. (See [15A NCAC 02T .0103(16)](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20t/15a%20ncac%2002t%20.0103.pdf))

* If no, how does the Applicant intend on complying with [15A NCAC 02U .0402(c)](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)?

1. Is automatic flow diversion to a 5-day upset pond provided in the event of plant upset?  Yes or  No
2. Does the treatment facility include any bypass or overflow lines?  Yes or  No

If yes, describe what treatment units are bypassed, why this is necessary, and where the bypass discharges:

1. Are multiple pumps provided wherever pumps are used?  Yes or  No

* If no, how does the Applicant intend on complying with [15A NCAC 02U .0402(k)](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)?

1. **RECLAIMED WATER SYSTEM DESIGN CRITERIA (Continued)**
2. Are any treatment or storage units located within the 100-year flood plain?  Yes or  No

* If Yes, which units are affected?       (Note that water tight seals or a minimum of two feet protection from the 100-year floodplain is required.)
* If No, then provide the distance to the nearest flood zone:       (feet); and provide the typical elevation at the edge of the flood zone:       (feet)

1. How many days of residuals storage are provided?       (Note: 30 days required per [15A NCAC 02U .0402(n)](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))
2. If an influent pump station is part of the proposed facility (i.e., within the wastewater treatment plant boundary), does the influent pump station meet the design criteria in [15A NCAC 02T .0305(h)](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20t/15a%20ncac%2002t%20.0305.pdf)?

Yes,  No,  N/A – To be permitted separately, or  N/A – Gravity fed

1. **DESIGN INFORMATION FOR NEW OR MODIFIED PORTIONS OF THE TREATMENT FACILITY**
2. Type of treatment system (extended aeration, MBR, SBR, etc):
3. Provide the requested treatment unit and mechanical equipment information (For conjunctive facilities, include only those treatment units, in addition to existing units, that are needed to produce reclaimed water):

a. PRELIMINARY/PRIMARY TREATMENT:  New Units,  Modified Units  N/A

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Treatment Unit | **Number of Units** | **Manufacturer or Material** | **Dimensions (ft) / Spacings (in)** | **Volume (gallons)** | **Plan Sheet Number** | **Specification Page Number** |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
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|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |

b. SECONDARY / TERTIARY TREATMENT  New Units,  Modified Units  N/A

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Treatment Unit** | **Number of Units** | **Manufacturer or Material** | **Dimensions (ft)** | **Volume (gallons)** | **Plan Sheet Number** | **Specification Page Number** |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
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1. **DESIGN INFORMATION FOR NEW OR MODIFIED PORTIONS OF THE TREATMENT FACILITY (Continued)**

c. DISINFECTION  New Units,  Modified Units  N/A

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Treatment Unit** | **Number of Units** | **Manufacturer or Material** | **Dimensions (ft)** | **Volume (gallons)** | **Plan Sheet Number** | **Specification Page Number** |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |

* If chlorination is the proposed method of disinfection, specify detention time provided:       minutes (NOTE: 30 minutes minimum required), and indicate at what treatment unit chlorine contact occurs:
* If ultraviolet (UV) light is the proposed method of disinfection, specify the number of banks:      , number of lamps per bank:       and maximum disinfection capacity:       GPM.

d. RESIDUALS TREATMENT  New Units,  Modified Units  N/A

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Treatment Unit** | **Number of Units** | **Manufacturer or Material** | **Dimensions (ft)** | **Volume (gallons)** | **Plan Sheet Number** | **Specification Page Number** |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |

e. PUMPS  New Units,  Modified Units  N/A

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Location** | **Number of Pumps** | **Purpose** | **Manufacturer / Type** | **Capacity** | | **Plan Sheet Number** | **Specification Page Number** |
| **GPM** | **TDH** |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
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f. BLOWERS  New Units,  Modified Units  N/A

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Location** | **No. of Blowers** | **Units Served** | **Manufacturer / Type** | **Capacity (CFM)** | **Plan Sheet Number** | **Specification Page Number** |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
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1. **DESIGN INFORMATION FOR NEW OR MODIFIED PORTIONS OF THE TREATMENT FACILITY (Continued)**

g. MIXERS  New Units,  Modified Units  N/A

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Location** | **No. of Mixers** | **Units Served** | **Manufacturer / Type** | **Power (hp)** | **Plan Sheet Number** | **Specification Page Number** |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
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h. FLOW METERS, OTHER RECORDING DEVICES & RELIABILITY  New Units,  Modified Units  N/A

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Device** | **Number of Units** | **Maximum Capacity** | **Manufacturer** | **Location** | **Plan Sheet Number** | **Specification Page Number** |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
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|  |  |  |  |  |  |  |

i. DISTRIBUION PUMP / DOSING TANK (IF APPLICABLE):  New Units,  Modified Units  N/A

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | | | | **Plan Sheet Reference** | **Specification Reference** |
| 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 irrigation during rain events |  | | | |  |  |

1. **DESIGN INFORMATION FOR EARTHEN STORAGE IMPOUNDMENTS:** [**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)

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 generator site?  Yes or  No

* **If no, then skip the remaining items in Section VIII.**

1. What is the storage impoundment type?
2. Storage Impoundment Coordinates (degrees, minutes, seconds): Latitude:   ○   ′   ″ Longitude: -  ○   ′   ″

Datum:  Level of accuracy: Method of measurement:

1. 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. Are subsurface drains present beneath or around the impoundment to control groundwater elevation?  Yes or  No
2. Is the impoundment designed to receive surface runoff?  Yes or  No

* If yes, what is the drainage area?       ft2, and was this runoff incorporated into the water balance?  Yes or  No

1. Will the reclaimed water be placed directly into or in contact with GA classified groundwater?  Yes or  No

If yes, 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

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 or N/A

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **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: