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----- Original Message -----

**Subject:**[Fwd: RE: Reclaimed Water Irrigation Permit]

**Date:**Fri, 17 Aug 2007 10:51:48 -0400

**From:**Pieter Scheer <pieter@rsgengineers.com>

**To:**Wilson, Donna <Donna.Wilson@ncmail.net>

Donna:

Attached are copies of Johnston County's reuse permits that were renewed last year. The first part of the document (Permit # WQ0019631) applies to the use at the landfill. I see that this permit should now reference permit 51-03, which was previously issued to combine 51-01 and 51-02.

Pieter

----- Original Message -----

**Subject:** RE: Reclaimed Water Irrigation Permit

**Date:** Fri, 17 Aug 2007 10:09:39 -0400

**From:** Haywood Phthisic <Haywood.Phthisic@johnstonnc.com>

**To:** 'Pieter Scheer' <pieter@rsgengineers.com>

Reuse permits attached.

>>

>> -----Original Message-----

>> From: Pieter Scheer [mailto:pieter@rsgengineers.com]

>> Sent: Thursday, August 16, 2007 10:25 AM

>> To: Phthisic, Haywood

>> Subject: Reclaimed Water Irrigation Permit

>>

>> Haywood:

>>

>> Can you forward a copy of your latest reclaimed water irrigation  
>> permit? Solid waste would like a copy.

>>

>> Thanks!

>>

>> Pieter

>>

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Pieter K. Scheer, P.E.

Senior Engineer

Richardson Smith Gardner & Associates, Inc.

14 N. Boylan Ave.

Raleigh, NC 27603

Phone: (919) 828-0577 x123

Fax: (919) 828-3899

www.rsgengineers.com



Michael F. Easley, Governor

William G. Ross Jr., Secretary  
North Carolina Department of Environment and Natural Resources

Alan W. Klimek, P.E. Director  
Division of Water Quality

November 16, 2006

Rick Hester  
Johnston County Department of Public Utilities  
P.O. Box 2263  
Smithfield, NC 27577

Subject: Permit No. WQ0019631  
Conjunctive Use at the Johnston  
County Landfill  
Reclaimed Water Utilization System  
Johnston County

Dear Mr. Hester:

In accordance with your permit renewal request received September 21, 2006, we are forwarding herewith Permit Number. WQ0019631, dated November 16, 2006, to Johnston County for the continued operation of the subject wastewater treatment and reclaimed water utilization system.

This permit shall be effective from the date of issuance until October 31, 2011, shall void Permit No. WQ0019631 issued May 5, 2006, and shall be subject to the conditions and limitations as specified therein. Please pay particular attention to the monitoring requirements in this permit. Failure to establish an adequate system for collecting and maintaining the required operational information will result in future compliance problems.

The Division of Waste Management, Solid Waste Section has issued Permits 51-01 and 51-02 for the operation of the Johnston County Landfill. The Solid Waste Section has approved the modification of Permit 51-02 to allow for spray irrigation of reclaimed wastewater onto certain identified fields in the landfill (see attached letter from the Solid Waste Section dated October 30, 2001). This permit shall become void if the Solid Waste Section terminates the spray irrigation modification of Permit 51-02. This permit cannot be altered in any way (with the exception of simple permit renewal) without prior approval from the Solid Waste Section.

If any parts, requirements, or limitations contained in this permit are unacceptable, you have the right to request an adjudicatory hearing upon written request within thirty (30) days following receipt of this permit. This request must be in the form of a written petition, conforming to Chapter 150B of the North Carolina General Statutes, and filed with the Office of Administrative Hearings, 6714 Mail Service Center, Raleigh, NC 27699-6714. Unless such demands are made this permit shall be final and binding.

If you need additional information concerning this matter, please contact Matthew Fleahman at (919) 715-6173.

Sincerely,

Alan W. Klimek, P.E.

One  
North Carolina  
Naturally

North Carolina Division of Water Quality  
Internet: [www.newaterquality.org](http://www.newaterquality.org)

1636 Mail Service Center  
2728 Capital Boulevard

Raleigh, NC 27699-1636  
Raleigh, NC 27604

Phone (919) 715-0295  
FAX (919) 715-6048

Customer Service  
1-877-623-6748

cc: Johnston County Health Department  
Raleigh Regional Office, Aquifer Protection Section  
Technical Assistance and Certification Unit  
Division of Waste Management, Solid Waste Section  
Aquifer Protection Central Files  
LAU Files

**NORTH CAROLINA**  
**ENVIRONMENTAL MANAGEMENT COMMISSION**  
**DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES**  
**RALEIGH**  
**WASTEWATER TREATMENT AND RECLAIMED WATER UTILIZATION PERMIT**

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In accordance with the provisions of Article 21 of Chapter 143, General Statutes of North Carolina as amended, and other applicable Laws, Rules, and Regulations

PERMISSION IS HEREBY GRANTED TO

**Johnston County**  
Johnston County

FOR THE

continued operation of a 401,918 GPD reclaimed water utilization system, consisting of spray irrigation onto 29 individual spray fields/zones totaling 447.61 acres at the Johnston County Landfill, to serve Johnston County with no discharge of wastes to the surface waters, pursuant to the application received September 21, 2006 and subsequent additional information received by the Division, and in conformity with the project plan, specifications, and other supporting data subsequently filed and approved by the Department of Environment and Natural Resources and considered a part of this permit

This permit shall be effective from the date of issuance until October 31, 2011, shall void Permit No. WQ0019631 issued May 5, 2006, and shall be subject to the following specified conditions and limitations:

**I. PERFORMANCE STANDARDS**

1. The reclaimed water utilization facilities shall be effectively maintained and operated at all times so that there is no discharge to the surface waters, nor any contamination of ground waters, which will render them unsatisfactory for normal use. In the event that the facilities fail to perform satisfactorily, including the creation of nuisance conditions or failure of the irrigation area to adequately assimilate the wastewater, the Permittee shall take immediate corrective actions including those actions that may be required by the Division of Water Quality or the Division of Waste Management, Solid Waste Section, such as:
  - a. the temporary or permanent termination of those spray irrigation zones not performing satisfactorily, causing nuisance conditions, or failing to assimilate the wastewater, and
  - b. the construction of additional or replacement wastewater treatment and disposal facilities.
2. The issuance of this permit shall not relieve the Permittee of the responsibility for damages to surface water or ground water resulting from the operation of this facility.
3. Diversion or bypassing of the untreated wastewater from the treatment facilities is prohibited.

4. The following buffers shall be maintained:
  - a. 100 feet between wetted areas and water supply wells,
  - b. 100 feet between wetted areas and waters classified as SA,
  - c. 25 feet between wetted areas and surface waters not classified as SA,
  - d. 100 feet between wastewater treatment units and wells,
  - e. 50 feet between reclaimed water storage/irrigation ponds and property lines, and
  - f. 50 feet between wastewater treatment units and property lines.
5. Public access to the irrigation sites shall be controlled during active site use. Such controls may include the posting of signs showing the activities being conducted at each site. A sign shall be posted in plain sight in the clubhouse showing these activities.
6. This permit shall become void if the Division of Waste Management, Solid Waste Section terminates the spray irrigation modification of Permit 51-02. This permit in no way alleviates the Permittee from any additional spray irrigation restrictions and/or obligations placed on them by the Solid Waste Section in the form of future permit modifications.
7. This permit cannot be altered in any way (with the exception of simple permit renewal) without prior approvals from the Division of Water Quality and from the Division of Waste Management, Solid Waste Section.
8. The following shall be requirements for the reclaimed water distribution, storage, and utilization facilities:
  - a. All reclaimed water valves, storage facilities, and outlets shall be tagged or labeled to warn the public or employees that the water is not intended for drinking. Where appropriate, such warning shall inform the public or employees to avoid contact with the water.
  - b. All reclaimed water piping, valves, outlets, and other appurtenances shall be color-coded, taped, or otherwise marked to identify the source of the water as being reclaimed water.
    - i. All reclaimed water piping and appurtenances shall be either colored purple (i.e., Pantone 522) and embossed or integrally stamped or marked "CAUTION: RECLAIMED WATER – DO NOT DRINK" or be installed with a purple (i.e., Pantone 522) identification tape or polyethylene vinyl wrap. The warning shall be stamped on opposite sides of the pipe and repeated every three feet or less.
    - ii. Identification tape shall be at least three inches wide and have white or black lettering on purple (i.e., Pantone 522) field stating "CAUTION: RECLAIMED WATER – DO NOT DRINK." Identification tape shall be installed on top of reclaimed water pipelines, fastened at least every 10 feet to each pipe length and run continuously the entire length of the pipe.
  - c. All reclaimed water valves and outlets shall be of a type, or secured in a manner, that permits operation by authorized personnel only.
  - d. Above-ground hose bibs (i.e., spigots or other hand-operated connections) shall not be present. Hose bibs shall be located in locked below-grade vaults that shall be clearly labeled as being of non-potable quality. As an alternative to the use of locked below-grade vaults with standard hose bib services, hose bibs, which can only be operated by a special tool or connected to a special hose connection, may be placed in non-lockable underground services boxes clearly labeled as non-potable water.

## **II. OPERATION AND MAINTENANCE REQUIREMENTS**

1. The facilities shall be properly maintained and operated at all times.

2. Upon classification of the wastewater treatment and irrigation facilities by the Water Pollution Control System Operators Certification Commission (WPCSOCC), the Permittee shall designate and employ a certified operator to be in responsible charge (ORC) and one or more certified operator(s) to be back-up ORC(s) of the facilities in accordance with 15A NCAC 8G .0201. The ORC shall visit the facilities in accordance with 15A NCAC 8G .0204 or as specified in this permit and shall comply with all other conditions specified in these rules.
3. A suitable, year-round vegetative cover shall be maintained on the irrigation areas. The reclaimed wastewater may also be utilized on non-vegetative areas to establish seed beds or sprig beds, to nurture vegetative growth and to expedite and enhance land restoration/reclamation/and erosion control efforts.
4. Irrigation shall not be performed during inclement weather or when the ground is in a condition that will cause runoff.
5. Adequate measures shall be taken to prevent wastewater runoff from the irrigation field.
6. The application rate shall not exceed a cumulative loading of over any twelve (12) month period as given by the following tables. The instantaneous application rate not to exceed 0.3 inches per hour.

Field #	Crop	Max. Irrigation Rate (in/yr)	Acres	Max. Annual Application (gal/yr)
1	Trees	20	32.35	17,568,800
2	CB*	20	54.73	29,723,100
3	CB*	16	10.44	4,535,900
4	CB*	16	6.03	2,619,800
5	Grass	16	24.11	10,475,000
6	Grass/Trees	14	8.82	3,353,000
7	Grass/Trees	14	5.15	1,957,800
8	Grass/Trees	14	28.97	11,013,200
9	Grass/Trees	15	2.35	957,200
10	Grass/Trees	15	6.91	2,814,500
Livestock Area & Forest Service Area	Grass	15	5.9	2,403,200
Roadway Dust Control Area	Grass/Dirt Road	15	6.7	2,729,000
Closed LF Cells 1 & 2	Grass	5	15.9	2,158,800
Closed LF Cell 3	Grass	5	11.26	1,528,800
Closed LF Cell 4	Grass	5	26.42	3,587,100
Closed LF Cell 5	Grass	5	27.52	15,695,000
Borrow Area C	Grass	8	12.68	33,580,000
		Totals:	286.24	146,700,200

CB\* Coastal Bermuda hay, overseed with annual rye as a winter crop

Johnston County Landfill Irrigation Phase II				
Field #	Zone	Max. Irrigation Rate (in/yr)	Acres	Max. Annual Application (gal/yr)
1	1	38.61	9.32	9,771,378
4	1	38.61	16.62	17,424,926
5	1	38.61	5.65	5,923,636
6	1	38.61	5.65	5,923,636
7	2	14.31	5.35	2,078,900
8	1	38.61	5.65	5,923,636
9	2	14.31	35.34	13,732,395
10	2	14.31	5.65	2,195,474
11	2	14.31	5.65	2,195,474
12	2	14.31	6.74	2,619,025
13	2	14.31	12.26	4,763,983
14	2	14.31	9.20	3,574,930

Only those spray irrigation fields (zones) specified above and delineated in the approved Plans can be irrigated with reuse quality wastewater. Spray irrigation of reuse quality wastewater onto tracks of land not specified above is not approved, and can only be approved with permit modification.

7. Irrigation in Spray Field #1 of the Johnston County Landfill Irrigation Phase II shall not be performed during windy weather such that spray irrigation water drifts onto adjacent property.
8. No type of wastewater other than that from the Central Johnston County Regional wastewater treatment facility shall be irrigated onto the irrigation area.
9. If a spray irrigation field has been modified such that the ground topography has been altered (from borrow operations, for example) compared to the approved Plans, then spray irrigation activities may only be reinstated at the altered field with permit modification because of the altering of the ground topography. Such a permit modification application must be accompanied by a re-evaluation of the soils and groundwater of the altered field.

### **III. MONITORING AND REPORTING REQUIREMENTS**

1. Any monitoring (including groundwater, surface water, soil or plant tissue analyses) deemed necessary by the Division to insure surface and ground water protection will be established and an acceptable sampling reporting schedule shall be followed.
2. Adequate records shall be maintained by the Permittee tracking the amount of wastewater disposed. These records shall include, but are not necessarily limited to the following information:
  - a. date and time of irrigation,
  - b. volume of wastewater irrigated,
  - c. zone irrigated,
  - d. length of time zone is irrigated,
  - e. continuous weekly, monthly, and year-to-date hydraulic (inches/acre) loadings for each zone,
  - f. weather conditions, and
  - g. maintenance of cover crops.

3. Three (3) copies of all operation and disposal records (as specified in condition III 2) on Form NDAR-1 shall be submitted monthly on or before the last day of the following month to the Division of Water Quality at the address below. One (1) copy of all operation and disposal records (as specified in condition III 2) on Form NDAR-1 shall be submitted monthly on or before the last day of the following month to the Division of Waste Management at the address below:

Division of Water Quality  
1617 Mail Service Center  
Attn: Information Processing Unit  
Raleigh, North Carolina 27699-1617

Division of Waste Management  
Solid Waste Section  
Compliance Hydrogeologist  
1646 Mail Service Center  
Raleigh, North Carolina, 27699-1646A

4. **Noncompliance Notification:**

The Permittee shall report by telephone to the Raleigh Regional Office, telephone number (919) 791-4200, as soon as possible, but in no case more than 24 hours or on the next working day following the occurrence or first knowledge of the occurrence of any of the following:

- a. Any occurrence at the wastewater treatment facility which results in the treatment of significant amounts of wastes which are abnormal in quantity or characteristic, such as the dumping of the contents of a sludge digester; the known passage of a slug of hazardous substance through the facility; or any other unusual circumstances.
- b. Any process unit failure, due to known or unknown reasons, that render the facility incapable of adequate wastewater treatment such as mechanical or electrical failures of pumps, aerators, compressors, etc.
- c. Any time that self-monitoring information indicates that the facility has gone out of compliance with its permit limitations.

Occurrences outside normal business hours may also be reported to the Division's Emergency Response personnel at telephone number (800) 662-7956, (800) 858-0368, or (919) 733-3300. Persons reporting such occurrences by telephone shall also file a written report in letter form within five (5) days following first knowledge of the occurrence. This report must outline the actions taken or proposed to be taken to ensure that the problem does not recur.

#### **IV. GROUNDWATER REQUIREMENTS**

1. The following monitoring wells shall be sampled every month proceeding through the start-up of waste disposal operations, and thereafter every month for the parameters listed below:

DWQ monitoring wells:                      DWQ-MW-1  
   DWQ-MW-2  
   DWQ-MW-3

Landfill monitoring wells:                      CDLMW-5  
   MW-3  
   MW-5-1  
   MW-5-2  
   MW-5-10  
   PZ-3

Sampling Parameter List:

Water Level

The depth to water in each well shall be measured from the surveyed point on the top of the casing. The measuring points (top of well casing) of all monitoring wells shall be surveyed relative to a common datum.

All reports and documentation GW-59 shall be mailed to the following two addresses:

Division of Water Quality  
1617 Mail Service Center  
Attn: Information Processing Unit  
1636 Mail Service Center  
Raleigh, North Carolina 27699-1636

Division of Waste Management  
Solid Waste Section  
Compliance Hydrogeologist  
1646 Mail Service Center  
Raleigh, NC 27699-1646

(Note: Updated blank forms (GW-1 and GW-59) may be downloaded from the Groundwater Section's website at <http://gw.ehnr.state.nc.us/> or requested from the Aquifer Protection Section at 1636 Mail Service Center, Raleigh, NC 27699-1636.

The results of the sampling and analysis must be received on Form GW-59 (Groundwater Quality Monitoring: Compliance Report Form) by the Division of Water Quality, Information Processing Unit and the Division of Waste Management, Solid Waste Section, on or before the last working day of the month following the sampling month. The data of all groundwater sampling analyses required by the permit conditions must be reported using the most recent GW-59 form along with attached copies of the laboratory analyses.

2. Waste application activities shall not occur when the vertical separation between ground surface and the water table is less than one (1) foot. Verification of the water table elevation can be confirmed by water level readings obtained from the monitor wells near the site or auger boring(s), which must be done within 24 hours, prior to application of wastewater. Any open borings must be properly filled with native soil, prior to application to decrease the chance of any waste contaminating the groundwater.
3. The compliance boundary and review boundary for wastewater disposal systems are specified by 15A NCAC 2L. For systems utilizing reclaimed water, 15A NCAC 2H .0219(k) specifies that both the compliance boundary and review boundary shall be established at the property line. An exceedance of groundwater quality standards at or beyond the compliance boundary is subject to immediate remediation action in addition to the penalty provisions under North Carolina General Statute, 143-215.6A(a)(1).
4. Any groundwater quality monitoring, as deemed necessary by the Division of Water Quality, Groundwater Section or by the Division of Waste Management, Solid Waste Section, shall be provided.

## V. INSPECTIONS

1. Adequate inspection, maintenance, and cleaning shall be provided by the Permittee to insure proper operation of the subject facilities.

2. The Permittee or his designee shall inspect the wastewater treatment and disposal facilities to prevent malfunctions and deterioration, operator errors and discharges which may cause or lead to the release of wastes to the environment, a threat to human health, or a nuisance. The Permittee shall keep an inspection log or summary including at least the date and time of inspection, observations made, and any maintenance, repairs, or corrective actions taken by the Permittee. This log of inspections shall be maintained by the Permittee for a period of three years from the date of the inspection and shall be made available upon request to the Division or other permitting authority.
3. Any duly authorized officer, employee, or representative of the Division may, upon presentation of credentials, enter and inspect any property, premises or place on or related to the disposal site or facility at any reasonable time for the purpose of determining compliance with this permit; may inspect or copy any records that must be maintained under the terms and conditions of this permit, and may obtain samples of groundwater, surface water, or leachate.

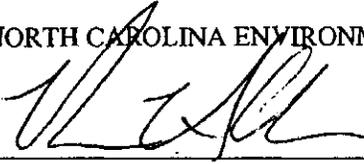
## **VI. GENERAL CONDITIONS**

1. This permit shall become voidable unless the facilities are constructed in accordance with the conditions of this permit, the approved plans and specifications, and other supporting data.
2. This permit is effective only with respect to the nature and volume of wastes described in the application and other supporting data.
3. This permit is not transferable. In the event there is a desire for the facilities to change ownership, or there is a name change of the Permittee, a formal permit request must be submitted to the Division accompanied by an application fee, documentation from the parties involved, and other supporting materials as may be appropriate. The approval of this request will be considered on its merits and may or may not be approved.
4. Failure to abide by the conditions and limitations contained in this permit may subject the Permittee to an enforcement action by the Division in accordance with North Carolina General Statute 143-215.6A to 143-215.6C.
5. The issuance of this permit does not exempt the Permittee from complying with any and all statutes, rules, regulations, or ordinances which may be imposed by other government agencies (local, state, and federal) which have jurisdiction, including but not limited to applicable river buffer rules in 15A NCAC 2B.0200, erosion and sedimentation control requirements in 15A NCAC Chapter 4 and under the Division's General Permit NCG010000, and any requirements pertaining to wetlands under 15A NCAC 2B .0200 and 2H .0500.
6. The Permittee shall retain a set of approved plans and specifications for the subject facility for the life of the project.
7. The Permittee shall pay the annual administering and compliance fee within thirty days of being billed by the Division. Failure to pay the fee accordingly may cause the Division to initiate action to revoke this permit as specified by 15A NCAC 02T .0105(e).

8. The Permittee, at least six (6) months prior to the expiration of this permit, shall request its extension. Upon receipt of the request, the Commission will review the adequacy of the facilities described therein, and if warranted, will extend the permit for such period of time and under such conditions and limitations as it may deem appropriate.

Permit issued this the 16th day of November, 2006

NORTH CAROLINA ENVIRONMENTAL MANAGEMENT COMMISSION



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Alan W. Klimek, P.E., Director  
Division of Water Quality  
By Authority of the Environmental Management Commission

**Permit Number WQ0019631**



Michael F. Easley, Governor  
William G. Ross Jr., Secretary  
North Carolina Department of Environment and Natural Resources  
Alan W. Klimek, P.E. Director  
Division of Water Quality

November 16, 2006

Rick Hester  
Johnston County Department of Public Utilities  
P.O. Box 2263  
Smithfield, NC 27577

Subject: Permit No. WQ0019632  
Johnston County  
Wastewater Treatment and  
Reclaimed Water Utilization System  
Johnston County

Dear Mr. Hester:

In accordance with your permit renewal request received September 21, 2006, we are forwarding herewith Permit Number. WQ0019632, dated November 16, 2006, to Johnston County for the continued operation of the subject wastewater treatment and reclaimed water utilization system.

This permit shall be effective from the date of issuance until October 31, 2011, shall void Permit No. WQ0019632 issued May 14, 2003, and shall be subject to the conditions and limitations as specified therein. Please pay particular attention to the monitoring requirements in this permit. Failure to establish an adequate system for collecting and maintaining the required operational information will result in future compliance problems.

If any parts, requirements, or limitations contained in this permit are unacceptable, you have the right to request an adjudicatory hearing upon written request within thirty (30) days following receipt of this permit. This request must be in the form of a written petition, conforming to Chapter 150B of the North Carolina General Statutes, and filed with the Office of Administrative Hearings, 6714 Mail Service Center, Raleigh, NC 27699-6714. Unless such demands are made this permit shall be final and binding.

If you need additional information concerning this matter, please contact Matthew Fleahman at (919) 715-6173.

Sincerely,

Alan W. Klimek, P.E.

cc: Johnston County Health Department  
Raleigh Regional Office, Aquifer Protection Section  
Technical Assistance and Certification Unit  
Aquifer Protection Central Files  
LAU Files

One  
North Carolina  
Naturally

North Carolina Division of Water Quality 1636 Mail Service Center Raleigh, NC 27699-1636 Phone (919) 715-0295 Customer Service  
Internet: www.ncwaterquality.org 2728 Capital Boulevard Raleigh, NC 27604 FAX (919) 715-6048 1-877-623-6748

NORTH CAROLINA  
ENVIRONMENTAL MANAGEMENT COMMISSION  
DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES  
RALEIGH

**WASTEWATER TREATMENT AND RECLAIMED WATER UTILIZATION PERMIT**

---

In accordance with the provisions of Article 21 of Chapter 143, General Statutes of North Carolina as amended, and other applicable Laws, Rules, and Regulations

PERMISSION IS HEREBY GRANTED TO

**Johnston County**  
Johnston County

FOR THE

continued operation of a 266,918 GPD reclaimed water utilization system consisting of a 1.0 MG prestressed concrete ground storage tank, two (2) 1,800 GPM vertical turbine reclaimed water pumps, a flow metering vault, a chemical/electrical building, a sodium hypochlorite feed facility, a skid mounted 800 GPM reclaimed water pump station adjacent to the cascade aerator at the Central Johnston County Regional Wastewater Treatment Facility, with a 100 pound per day chlorine feed facility (Operation of the skid mounted reclaimed water pump station and chlorine feed system must not be initiated prior to issuance of a partial engineer's certification that covers construction of: The reclaimed water pipeline from the Central Johnston County Regional Wastewater Treatment Facility to the river, The reclaimed water pipeline crossing the Neuse River, and The reclaimed water pipeline from the Neuse River to the Golf Course at Johnston County Country Club, and the Central Johnston County Wastewater Treatment Facility must be producing reuse quality effluent prior to placing the skid mounted reclaimed water pump station and chlorine feed system into operation), and all associated appurtenances located at the Central Johnston County Regional Wastewater Treatment Facility for the storage and pumping of reclaimed quality effluent;

continued operation of reclaimed water distribution lines consisting of approximately 11,900 linear feet of 24-inch pipe, 13,100 linear feet of 20-inch pipe, 7,825 linear feet of 16-inch pipe, and 4,500 linear feet of 12-inch pipe, 1,200 linear feet 10-inch pipe, and 800 linear feet of 8-inch pipe; and

continued operation of a 500,000 gallon reclaimed water elevated storage tank and approximately 3,500 linear feet of 16-inch pipe, 1,300 linear feet of 10-inch pipe, and 600 linear feet of 4-inch pipe to distribute reclaimed water to the County Landfill

with no discharge of wastes to the surface waters, pursuant to the request for permit modification received September 21, 2006 and subsequent additional information received by the Division, and in conformity with the project plan, specifications, and other supporting data subsequently filed and approved by the Department of Environment and Natural Resources and considered a part of this permit.

This permit shall be effective from the date of issuance until October 31, 2011, shall void Permit No. WQ0019632 issued May 14, 2003, and shall be subject to the following specified conditions and limitations:

**I. PERFORMANCE STANDARDS**

1. The reclaimed water utilization facilities shall be effectively maintained and operated at all times so that there is no discharge to the surface waters, nor any contamination of ground waters, which will render them unsatisfactory for normal use. In the event that the facilities fail to perform satisfactorily, including the creation of nuisance conditions or failure of the irrigation area to adequately assimilate the wastewater, the Permittee shall take immediate corrective actions including those actions that may be required by the Division of Water Quality (Division), such as the construction of additional or replacement wastewater treatment and disposal facilities.
2. The issuance of this permit shall not relieve the Permittee of the responsibility for damages to surface water or ground water resulting from the operation of this facility.
3. The residuals generated from these treatment facilities must be disposed in accordance with General Statute 143-215.1 and in a manner approved by the Division.
4. Diversion or bypassing of the untreated wastewater from the treatment facilities is prohibited.
5. The following buffers shall be maintained:
  - a. 100 feet between wetted areas and water supply wells,
  - b. 100 feet between wetted areas and waters classified as SA,
  - c. 25 feet between wetted areas and surface waters not classified as SA,
  - d. 100 feet between wastewater treatment units and wells,
  - e. 50 feet between reclaimed water storage/irrigation ponds and property lines, and
  - f. 50 feet between wastewater treatment units and property lines.
6. The following shall be requirements for the reclaimed water distribution, storage, and utilization facilities:
  - a. All reclaimed water valves, storage facilities, and outlets shall be tagged or labeled to warn the public or employees that the water is not intended for drinking. Where appropriate, such warning shall inform the public or employees to avoid contact with the water.
  - b. All reclaimed water piping, valves, outlets, and other appurtenances shall be color-coded, taped, or otherwise marked to identify the source of the water as being reclaimed water.
    - i. All reclaimed water piping and appurtenances shall be either colored purple (i.e., Pantone 522) and embossed or integrally stamped or marked "CAUTION: RECLAIMED WATER – DO NOT DRINK" or be installed with a purple (i.e., Pantone 522) identification tape or polyethylene vinyl wrap. The warning shall be stamped on opposite sides of the pipe and repeated every three feet or less.
    - ii. Identification tape shall be at least three inches wide and have white or black lettering on purple (i.e., Pantone 522) field stating "CAUTION: RECLAIMED WATER – DO NOT DRINK." Identification tape shall be installed on top of reclaimed water pipelines, fastened at least every 10 feet to each pipe length and run continuously the entire length of the pipe.
  - c. All reclaimed water valves and outlets shall be of a type, or secured in a manner, that permits operation by authorized personnel only.
  - d. Above-ground hose bibs (i.e., spigots or other hand-operated connections) shall not be present. Hose bibs shall be located in locked below-grade vaults that shall be clearly labeled as being of non-potable quality. As an alternative to the use of locked below-grade vaults with standard hose bibs services, hose bibs, which can only be operated by a special tool or connected to a special hose connection, may be placed in non-lockable underground services boxes clearly labeled as non-potable water.

7. The Permittee shall maintain an active cross-connection control program for Johnston County Reclaimed Water Program and all associated facilities that shall have the following minimum requirements:
  - a. No direct cross-connections shall be allowed between the reclaimed water and potable water systems.
  - b. A reduced pressure principle backflow preventer, an approved air gap separation, or other device approved by the Division of Environmental Health shall be installed at the potable water service connection to the use area where both reclaimed water and potable water are supplied to a reclaimed water use area. The installation of the reduced pressure principle backflow prevention device shall allow proper testing.
  - c. An air gap separation, approved and regularly inspected by the Permittee shall be provided between the potable water and reclaimed water systems where potable water is used to supplement a reclaimed water system.
8. The following uses of reclaimed water distributed through Johnston County Reclaimed Water Program and all associated facilities shall be strictly forbidden by the Permittee:
  - a. Irrigation of direct food crops;
  - b. Filling of swimming pools, hot tubs, or similar uses;
  - c. Use as a raw potable water supply; and
  - d. Any use that would result in runoff of reclaimed water from the location of application or point of use.
9. The Compliance Boundary and Review Boundary, as defined in 15A NCAC 2H .0219 (k)(2)(B)(i)(IV), shall be located at the property line of any use area receiving reclaimed water through the Johnston County Reclaimed Water Program and all associated facilities.
10. Public access to the reclaimed water treatment, storage, and distribution facilities as well as contact with reclaimed water shall be controlled during reclaimed water use. Such controls may include fencing, signage, as well as various educational materials/programming.
11. The Permittee shall be approved to connect existing and new residential, commercial, industrial, and institutional users to the Johnston County Reclaimed Water Program and all associated facilities without prior application and receipt of a permit modification from the Division. Note, however, that this approval shall not extend to self-permitting of extensions to the reclaimed water distribution system. As part of this approval, the Permittee shall be responsible for developing, implementing, and maintaining the following minimum programs for ensuring the effective management of the local approval program as well as its compliance with the conditions of this permit:
  - a. An application program that would require each proposed user to gain prior approval from the Permittee to connect to the reclaimed water distribution system or modify their existing reclaimed water use. During the application review, the Permittee shall be responsible for completing the following minimum tasks: reviewing the proposed reclaimed water use, approving the design of any permanent reclaimed water distribution system within the reclaimed water use area, ensuring that cross-connection control issues and compliance with all applicable local ordinances are addressed within the reclaimed water use area, as well as consulting with the user regarding allowable reclaimed water loading rates and volumes. This application process shall also be initiated any time that a property transfers to a new proposed user (e.g., sale of a house, etc.).
  - b. A connection inspection program that would require the Permittee to perform an on-site assessment of the proposed user's reclaimed water use area. During the connection inspection, the Permittee shall be responsible for completing the following minimum tasks: ensuring that no cross connections between the reclaimed water system and potable water system exist and that the appropriate cross-connection control devices have been installed

within the reclaimed water use area and are functioning properly; verifying that any permanent reclaimed water distribution system within the reclaimed water use area will not result in overspray, overapplication, or runoff from the location of application or point of use; determining that adequate notification is provided to employees and the public regarding reclaimed water uses that are industrial in nature; as well as disseminating educational material regarding use of the reclaimed water system and compliance with all applicable local ordinances.

- c. A follow-up inspection program that would require an on-site assessment of each residential, commercial, industrial, and institutional user connected to the reclaimed water distribution system once per permit cycle. The minimum tasks associated with the follow-up inspection shall be the same as that associated with the connection inspection.
  - d. A compliance and enforcement program that would require the Permittee to ensure compliance with the conditions of this permit as well as all applicable local ordinances. The program shall include a component to address non-compliance with respect to the use of the reclaimed water system by each type of user (i.e., residential, commercial, industrial, and institutional).
  - e. A spill prevention, control, and notification program that would require the Permittee to comply with other conditions contained in this permit.
12. The Permittee shall maintain on staff an individual qualified to ensure compliance with 15A NCAC 2H .0219(k)(1)(C)(i)(I). The Permittee shall notify the Division at any time the qualified staff individual changes.
13. The Permittee shall develop, implement, and maintain an on-going, comprehensive educational program regarding the Johnston County Reclaimed Water Program and all associated facilities. This program shall be designed to be multi-faceted in that several audiences that may use, come into contact with, or install systems associated with reclaimed water shall be specifically targeted. Target audiences shall include, but shall not be limited to, the following:
- a. Permittee's staff (i.e., especially inspection staff);
  - b. Residential, commercial, industrial, and institutional users;
  - c. Landscaping and lawn care companies;
  - d. Irrigation system installers;
  - e. Construction companies and other contractors (i.e., especially plumbing contractors).

All educational programming and materials shall be available in English and Spanish (as necessary) and may be in the form of formal training sessions, public meetings, publication of notices in local newspapers, notification through television and radio news programs, maintenance of an informational web site, as well as the distribution of flyers or any combination thereof. The following is a non-inclusive list of topics that may be included in educational programming and materials (i.e., various target audiences may have needs that are specific to their involvement with the Johnston County Reclaimed Water Program and all associated facilities):

- a. Reclaimed water description and safety;
- b. Review of all applicable local ordinances as well as the consequences associated with violating any of the requirements contained therein;
- c. Review of application and review process, permit approval, and inspection requirements;
- d. Approved and disapproved uses of reclaimed water;
- e. Procedures for application (i.e., including buffer maintenance and application rate determination), use, and storage of reclaimed water as well as the disposal of unused reclaimed water;
- f. Procedures for spill prevention, control, and notification requirements;
- g. Personal safety and hygiene issues;
- h. Description of labeling requirements and security measures (i.e., special hose fittings, locked valve boxes, special pipe color, etc.);
- i. Cross-connection control program description.

## **II. OPERATION AND MAINTENANCE REQUIREMENTS**

1. The facilities shall be properly maintained and operated at all times.
2. Upon classification of the wastewater treatment and irrigation facilities by the Water Pollution Control System Operators Certification Commission (WPCSOCC), the Permittee shall designate and employ a certified operator to be in responsible charge (ORC) and one or more certified operator(s) to be back-up ORC(s) of the facilities in accordance with 15A NCAC 8G .0201. The ORC shall visit the facilities in accordance with 15A NCAC 8G .0204 or as specified in this permit and shall comply with all other conditions specified in these rules.
3. A suitable, year-round vegetative cover shall be maintained on the irrigation areas.
4. Irrigation shall not be performed during inclement weather or when the ground is in a condition that will cause runoff.
5. Adequate measures shall be taken to prevent wastewater runoff from the irrigation field.
6. The facilities shall be effectively maintained and operated as a non-discharge system to prevent the discharge of any wastewater resulting from the operation of this facility.
7. No type of wastewater other than that from Central Johnston County Regional Wastewater Treatment Facility shall be applied onto any irrigation area.
8. An automatically activated standby power source shall be on site and operational at all times. If a generator is employed as an alternate power supply, it shall be tested weekly by interrupting the primary power source.

9. A protective vegetative cover shall be established and maintained on all earthen basin embankments (outside toe of embankment to maximum pumping elevation), berms, pipe runs, erosion control areas, and surface water diversions. Trees, shrubs, and other woody vegetation shall not be allowed to grow on the earthen basin dikes or embankments. Earthen basin embankment areas shall be kept mowed or otherwise controlled and accessible.
10. All wastewater shall be routed to the five-day holding pond should the limit for fecal coliform (daily maximum concentration of 25 per 100 ml) or turbidity (instantaneous maximum of 10 NTU) be exceeded, until such time that the problems associated with the treatment capability of the wastewater treatment plant have been corrected. The wastewater in the five-day holding pond shall be pumped back to the treatment plant for re-treatment or treated in the five-day pond prior to discharge to the storage pond.
11. The Permittee shall implement adequate measures to prevent reclaimed water runoff from the application areas and points of use served by Johnston County Reclaimed Water Program and all associated facilities.

### III. MONITORING AND REPORTING REQUIREMENTS

1. Any monitoring (including groundwater, surface water, soil or plant tissue analyses) deemed necessary by the Division to insure surface and ground water protection will be established and an acceptable sampling reporting schedule shall be followed.
2. Influent flow shall be continuously monitored and daily flow values shall be reported on Form NDMR.

The Permittee shall install an appropriate flow measurement device consistent with approved engineering and scientific practices to ensure the accuracy and reliability of influent flow measurement. Flow measurement devices selected shall be capable of measuring flows with a maximum deviation of less than 10 percent from true flow, accurately calibrated at a minimum of once per year, and maintained to ensure that the accuracy of the measurements is consistent with the accepted capability of that type of device. The Permittee shall keep records of flow measurement device calibration on file for a period of at least three years. At a minimum, data to be included in this documentation shall be:

- a. Date of flow measurement device calibration
- b. Name of person performing calibration
- c. Percent from true flow

Plans and specifications for the flow measuring device shall be prepared by a licensed Professional Engineer and submitted to the appropriate regional office 30 days prior to installation. The flow-measuring device shall be installed within 1 year of the date of this permit.

3. As an indicator of proper operation and maintenance, the facility shall produce an effluent in compliance with the following limitations:

Parameter	Monthly Average <sup>a</sup>	Daily (Instantaneous) Maximum <sup>c</sup>
Flow	266,918 GPD	
BOD <sub>5</sub> (5-day, 20°C)	10 mg/l	15 mg/l
NH <sub>3</sub> as N	4 mg/l	6 mg/l
TSS	5 mg/l	10 mg/l
Fecal Coliform	14 per 100 ml <sup>b</sup>	25 per 100 ml
Turbidity		10 NTU

The effluent pH shall not be less than 6.0 standard units nor greater than 9.0 standard units.

- <sup>a</sup> Monthly averages for all but fecal coliform shall be the arithmetic mean of all samples collected during the reporting period.
- <sup>b</sup> Monthly average for fecal coliform shall be the geometric mean of all samples collected during the reporting period.
- <sup>c</sup> Daily maximum shall be the maximum value of all samples collected during the reporting period.

The Permittee shall monitor the effluent from the subject facilities at prior to discharge into the distribution or irrigation system for the following parameters:

Parameter	Sampling Point	Sampling Frequency	Type of Sample
Flow	Influent or Effluent	Continuous	Recording
Turbidity	Effluent	Continuous	Recording
BOD <sub>5</sub> (5-day, 20°C)	Effluent	*2/Month	Composite
NH <sub>3</sub> as N	Effluent	*2/Month	Composite
TSS	Effluent	*2/Month	Composite
Fecal Coliform	Effluent	*2/Month	Grab
Settleable Matter	Effluent	Daily	Grab
TKN	Effluent	*2/Month	Grab
NO <sub>3</sub>	Effluent	*2/Month	Grab
TDS	Effluent	**Triannually	Grab
TOC	Effluent	**Triannually	Grab
Chloride	Effluent	**Triannually	Grab
pH	Effluent	**Triannually	Grab

\* 2/Month sampling frequency only during the months of April through October. During the remainder of the year, these parameters shall be monitored monthly.

\*\* Triannually sampling shall be conducted during March, July, and November.

If Groundwater sampling indicates or predicts problems with the compliance with Groundwater Standards, this permit will be modified to include additional and/or more restrictive limitations.

4. Three (3) copies of all monitoring data (as specified in Condition III.2) on Form NDMR-1 shall be submitted monthly on or before the last day of the following month to the Division of Water Quality, address below. One (1) copy of all monitoring data (as specified in Condition III.3) on Form NDMR-1 shall be submitted monthly on or before the last day of the following month to the Division of Waste Management, address below.

NC Division of Water Quality  
 Information Processing Unit  
 1617 Mail Service Center  
 Raleigh, North Carolina 27699-1617

Division of Waste Management  
 Solid Waste Section  
 Compliance Hydrogeologist  
 1646 Mail Service Center  
 Raleigh, North Carolina, 27699-1646

5. A record shall be maintained of all residuals removed from this facility. This record shall include the name of the hauler, permit authorizing the disposal or a letter from a municipality agreeing to accept the residuals, date the residuals were hauled, and volume of residuals removed.
6. The Permittee shall maintain adequate records of the status of approved users. These records shall include, but shall not be limited to, the following:
  - a. Locations of all users and/or use areas;
  - b. Names and approval status of users and use areas;
  - c. Compliance status of all users; and
  - d. Measured or estimated volumes of reclaimed water by users or use areas
7. A maintenance log shall be maintained at this facility including but not limited to the following items:
  - a. Daily sampling results of dissolved oxygen in the aeration basin and at the clarifier weir.
  - b. Visual observations of the plant and plant site.
  - c. Record of preventative maintenance (changing of filters, adjusting belt tensions, alarm testing, diffuser inspections and cleanings, etc.).
  - d. Date of calibration of flow measurement device.
  - e. Date and results of power interruption testing on alternate power supply.
8. **Noncompliance Notification:**

The Permittee shall report by telephone to the Raleigh Regional Office, telephone number (919) 791-4200, as soon as possible, but in no case more than 24 hours or on the next working day following the occurrence or first knowledge of the occurrence of any of the following:

- e. Any occurrence at the wastewater treatment facility which results in the treatment of significant amounts of wastes which are abnormal in quantity or characteristic, such as the dumping of the contents of a sludge digester; the known passage of a slug of hazardous substance through the facility; or any other unusual circumstances.
- f. Any process unit failure, due to known or unknown reasons, that render the facility incapable of adequate wastewater treatment such as mechanical or electrical failures of pumps, aerators, compressors, etc.
- g. Any failure of a pumping station, sewer line, or treatment facility resulting in a by-pass directly to receiving waters without treatment of all or any portion of the influent to such station or facility.
- h. Any time that self-monitoring information indicates that the facility has gone out of compliance with its permit limitations.

Occurrences outside normal business hours may also be reported to the Division's Emergency Response personnel at telephone number (800) 662-7956, (800) 858-0368, or (919) 733-3300. Persons reporting such occurrences by telephone shall also file a written report in letter form within five (5) days following first knowledge of the occurrence. This report must outline the actions taken or proposed to be taken to ensure that the problem does not recur.

## **V. INSPECTIONS**

1. Adequate inspection, maintenance, and cleaning shall be provided by the Permittee to insure proper operation of the subject facilities.
2. The Permittee or his designee shall inspect the wastewater treatment and disposal facilities to prevent malfunctions and deterioration, operator errors and discharges which may cause or lead to the release of wastes to the environment, a threat to human health, or a nuisance. The Permittee shall keep an inspection log or summary including at least the date and time of inspection, observations made, and any maintenance, repairs, or corrective actions taken by the Permittee. This log of inspections shall be maintained by the Permittee for a period of three years from the date of the inspection and shall be made available upon request to the Division or other permitting authority.
3. Any duly authorized officer, employee, or representative of the Division may, upon presentation of credentials, enter and inspect any property, premises or place on or related to the disposal site or facility at any reasonable time for the purpose of determining compliance with this permit; may inspect or copy any records that must be maintained under the terms and conditions of this permit, and may obtain samples of groundwater, surface water, or leachate.

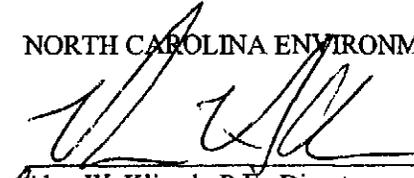
## **VI. GENERAL CONDITIONS**

1. This permit shall become voidable unless the facilities are constructed in accordance with the conditions of this permit, the approved plans and specifications, and other supporting data.
2. This permit is effective only with respect to the nature and volume of wastes described in the application and other supporting data.
3. This permit is issued pursuant to T15A:2H.0219(p) for the construction and operation of a reclaimed water utilization facility without flow equalization. In the event that non-compliance with any permit limitation results from the absence of flow equalization, this permit may be administratively reopened, and a requirement for the construction of a flow equalization basin may be incorporated into the permit.
4. This permit is not transferable. In the event there is a desire for the facilities to change ownership, or there is a name change of the Permittee, a formal permit request must be submitted to the Division accompanied by an application fee, documentation from the parties involved, and other supporting materials as may be appropriate. The approval of this request will be considered on its merits and may or may not be approved.
5. Failure to abide by the conditions and limitations contained in this permit may subject the Permittee to an enforcement action by the Division in accordance with North Carolina General Statute 143-215.6A to 143-215.6C.
6. The issuance of this permit does not exempt the Permittee from complying with any and all statutes, rules, regulations, or ordinances which may be imposed by other government agencies (local, state, and federal) which have jurisdiction, including but not limited to applicable river buffer rules in 15A NCAC 2B.0200, erosion and sedimentation control requirements in 15A NCAC Chapter 4 and under the Division's General Permit NCG010000, and any requirements pertaining to wetlands under 15A NCAC 2B .0200 and 2H .0500.
7. The Permittee shall retain a set of approved plans and specifications for the subject facility for the life of the project.

8. The Permittee shall pay the annual administering and compliance fee within thirty days of being billed by the Division. Failure to pay the fee accordingly may cause the Division to initiate action to revoke this permit as specified by 15A NCAC 02T .0105(e).
9. The Permittee, at least six (6) months prior to the expiration of this permit, shall request its extension. Upon receipt of the request, the Commission will review the adequacy of the facilities described therein, and if warranted, will extend the permit for such period of time and under such conditions and limitations as it may deem appropriate.
10. This permit in no way negates, precludes, or invalidates the most recent reissuance of NPDES Permit No. NC0030716, and the Permittee shall continue to comply with all conditions provided for therein

Permit issued this the 16<sup>th</sup> day of November, 2006.

NORTH CAROLINA ENVIRONMENTAL MANAGEMENT COMMISSION



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Alan W. Klimek, P.E., Director  
Division of Water Quality  
By Authority of the Environmental Management Commission

**Permit Number WQ0019632**